

Talc

Toxicological Data on the Unburnt Ingredient

[+ve, positive; -ve, negative; ?, equivocal; with, with metabolic activation; without, without metabolic activation]

In vivo					
Species	Test conditions	Endpoint	Result	Reference	
Rat (5)	Animals given up to 5 g talc/kg bw/day orally for 5 days. Bone marrow cells examined for chromosome aberrations.	Chromosome damage	-ve	Litton Bionetics, 1974	
Rat (10 males)	Dominant lethal assay. Animals given up to 5 g talc/kg bw/day orally for 5 days and then mated with untreated females. Offspring evaluated for early foetal deaths.	Germ cell mutation	-ve	Litton Bionetics, 1974	

In vitro						
Test system	Test conditions	Endpoint	Activation	Result	References	
Human cells (not further specified in citing source)	Talc tested for ability to induce chromosome aberrations. No further details provided in citing source. The absence of S9 is not a critical limitation, as talc is inorganic.	Chromosome damage	Without	-ve	Litton Bionetics, 1974	
Rat pleural mesothelial cells	Sister chromatid exchange and UDS (unscheduled DNA synthesis) assays. Talc (presumably CAS 14807-96-6) tested up to “0.05 mg/cm ² ”.	Chromosome effects and DNA damage (indicative test)	Without	-ve limited study, not tested with S9	Endo-Capron et al. 1993	

Chinese hamster lung cells	Cells incubated with talc (possibly at up to 0.25 mg/ml) for 24 hr, and examined for chromosome aberrations and polyploidy. Paper in Japanese, with limited information in English.	Chromosome damage and changes in chromosome number	Apparently without	-ve (for aberrations) +ve (for number changes)	Sofuni, 1994
<i>Salmonella typhimurium</i> , strains TA98, TA100, TA1535, TA1537, TA1538	Ames assay. Talc (presumably CAS 14807-96-6) tested up to 20 mg/plate.	Mutation	With and without S9	-ve	Sofuni, 1994
<i>Salmonella typhimurium</i> , strains TA97, TA102	Ames assay. Talc (presumably CAS 14807-96-6) tested up to 10 mg/plate.	Mutation	With and without S9	-ve Limited assay as only two strains tested	Fujita et al. 1988
<i>Salmonella typhimurium</i> and <i>Saccharomyces cerevisiae</i> , strains not specified in citing source	Ames/mutagenicity assay with talc. No further details provided in citing source.	Mutation	Without	-ve Limited assay as not tested with S9	Litton Bionetics, 1974

<i>Salmonella typhimurium</i> and <i>Saccharomyces cerevisiae</i> , strains not specified in citing source	Host-mediated assays. Groups of 10 mice given up to 5 g talc/kg bw/day by gavage for 5 days. Test organisms, presumably resident in the peritoneal cavity by prior injection, were probably removed and assessed for mutations.	Mutation	Not applicable (supplied by intact mouse)	-ve	Litton Bionetics, 1974
<i>Bacillus subtilis</i> strains H17 and M45	Rec assay measuring differential toxicity. Tested at 25 mg/disk.	DNA damage (indirect test)	With and without S9	Even at this high dose, talc was not toxic. In the absence of toxicity, no conclusion is possible.	Sasaki, 1994

References:

Endo-Capron S et al (1993). In vitro response of rat pleural mesothelial cells to talc samples in genotoxicity assays (sister chromatid exchanges and DNA repair). *Toxicology in Vitro*, 7, 7-14 (cited in CCRIS, 1997; HSDB, 2002).

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