

Nitrocellulose

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	Results	Reference
Rat (numbers unspecified in citing source)	Fed 10% in diet for 13 weeks. Peripheral blood lymphocytes and kidney cells examined for chromosome aberrations, sister chromatid exchanges and aneuploidy. Nitrocellulose intake could not be determined due to the rats scattering the fibres from the food pots.	Chromosome damage and numerical chromosomal changes.	-ve	Ellis et al. 1976
Rat, CD (numbers unspecified in citing source)	Fed 10% in the diet for 2 years. Kidney and bone marrow cells analysed for chromosome aberrations and aneuploidy. Nitrocellulose intake could not be determined due to the rats scattering the fibres from the food pots.	Chromosome damage and numerical chromosomal changes	-ve	Ellis et al. 1980

In vitro

Test system	Test conditions	Endpoint	Activation status	Results	Reference
<i>Salmonella typhimurium</i> strains TA98, TA100, TA1535, TA1537, TA1538	Ames test at concentrations of up to 5 mg/plate.	Mutation	With and without S9	-ve	Ellis et al. 1978
<i>Salmonella typhimurium</i> strains TA98, TA100	Ames test of burnt gun propellants. The propellants contained nitrocellulose, nitroglycerine, diphenylamine, potassium nitrate, phthalates and graphite	Mutation	With and without	+ve both with and without S9. About twice the number of mutants were induced without S9. [The authors suggested that heating may have produced nitroaromatic amines or aromatic amines, both of which are known mutagens.]	Felton et al., 1990

References

Ellis HV *et al.* (1976). Mammalian toxicity of munitions compounds. Phase II. Effects of multiple doses Part IV; nitrocellulose. Progress Report no. 5, Midwest Research Institute, Kansas City, Missouri. Contract No. DAMD-17-74-C-4073. AD-A062016. Government Reports Announcements & Index (GRA&I), Issue 24, 1990, NTIS/PB90-273541.

Ellis HV *et al.* (1978). Mammalian toxicity of munitions compounds. Phase I. Acute oral toxicity, primary skin and eye irritation, dermal sensitization, disposition and metabolism, and Ames tests of additional compounds. Progress Report No. 6, Midwest Research Institute, Kansas City, Missouri. Contract No. DAMD-17-74-C-4073. Government Reports Announcements & Index (GRA&I), Issue 21, 1979, NTIS/AD-A06933/3.

Ellis HV *et al.* (1980). Mammalian toxicity of munitions compounds. Phase III. Effects of life-time exposure. Part III. Nitrocellulose. Progress Report No. 9, Midwest

Research Institute, Kansas City, Missouri. Contract No. DAMD-17-74-C-4073.
Government Reports Announcements & Index (GRA&I), Issue 09.

Felton JS et al. (1990). Mutagenicity of burnt gun propellants. Mutation and the Environment, part E. Ed. Mendelsohn ML and Albertini RJ. Wiley-Liss. ISBN 0-471-56790-6.