trans-1,4-DICHLOROBUTENE

Data were last reviewed in IARC (1977) and the compound was classified in *IARC Monographs* Supplement 7 (1987).

1. Exposure Data

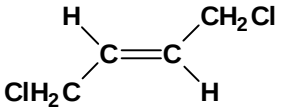
1.1 Chemical and physical data

1.1.1 *Nomenclature*

Chem. Abstr. Serv. Reg. No.: 110-57-6

Chem. Abstr. Name: *trans*-1,4-Dichloro-2-butene

1.1.2 *Structural and molecular formulae and relative molecular mass*



$C_4H_6Cl_2$ Relative molecular mass: 125

1.1.3 *Physical properties* (for details, see IARC, 1977)

(*a*) *Boiling-point*: 155.5°C at 101 kPa

(*b*) *Melting-point*: 1–3°C

(*c*) *Conversion factor*: $mg/m^3 = 5.1 \times ppm$

1.2 Production and use

trans-1,4-Dichlorobutene has been produced commercially since about 1963 in several countries by the chlorination of 1,3-butadiene. By far its major use is as an intermediate in the manufacture of hexamethylenediamine and chloroprene (IARC, 1977).

2. Studies of Cancer in Humans

No data were available to the Working Group.

3. Studies of Cancer in Experimental Animals

trans-1,4-Dichlorobutene was tested for carcinogenicity in mice by skin application and by subcutaneous and intraperitoneal administration. It produced a low incidence of local sarcomas when injected subcutaneously or intraperitoneally (IARC, 1977).

4. Other Data Relevant to an Evaluation of Carcinogenicity and its Mechanisms

4.1 Absorption, distribution, metabolism and excretion

No data were available to the Working Group.

4.2 Toxic effects

No data were available to the Working Group.

4.3 Reproductive and developmental effects

No data were available to the Working Group.

4.4 Genetic and related effects

4.4.1 *Humans*

No data were available to the Working Group.

4.4.2 *Experimental systems*

trans-1,4-Dichlorobutene is mutagenic to bacteria (IARC, 1977).

5. Evaluation

No epidemiological data relevant to the carcinogenicity of *trans*-1,4-dichlorobutene were available.

There is *inadequate evidence* in experimental animals for the carcinogenicity of *trans*-1,4-dichlorobutene.

Overall evaluation

trans-1,4-Dichlorobutene is *not classifiable as to its carcinogenicity to humans (Group 3).*

6. References

IARC (1977) *IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man*, Vol. 15, *Some Fumigants, the Herbicides 2,4-D and 2,4,5-T, Chlorinated Dibenzodioxins and Miscellaneous Industrial Chemicals*, Lyon, pp. 149–154

IARC (1987) *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans*, Supplement 7, *Overall Evaluations of Carcinogenicity: An Updating of* IARC Monographs *Volumes 1 to 42*, Lyon, p. 62