

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

November 6, 2002

TO: 1,3-Butadiene file (CAS # 106-99-0)

FROM: Gary Butterfield

SUBJECT: New screening levels

IRIS has recently (Nov. 5, 2002) updated the values for the RfC and the cancer potency for 1,3-butadiene.

The RfC is set at 2 ug/m^3 based on ovarian atrophy observed in the NTP 1993 two-year mouse inhalation study at the lowest dose level of 6.25 ppm. Uncertainty factors of 3 for interspecies extrapolation, and incomplete database were applied, as were uncertainty factors of 10 for intraspecies variability, and LOAEL-to-NOAEL. This resulted in a total UF of 1000, being applied to the BMCL of 0.88 ppm.

The cancer potency is set at 0.08 (ppb)^{-1} or $3e-5 \text{ (ug/m}^3\text{)}^{-1}$ resulting in an IRSL of 0.03 ug/m^3 and SRSL of 0.3 ug/m^3 . These cancer numbers comes from epidemiology study of Delzell et al (1995), which found increased leukemia incidences in styrene-butadiene rubber workers.

See the IRIS printout and the EPA 2002 Health Assessment Document for additional details on how these values were derived.