

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

TO: File for carbon disulfide (CAS # 75-15-0)

FROM: Robert Sills, AQD Toxics Unit Supervisor

SUBJECT: Carbon disulfide ITSL change in the averaging time from 24 hrs to annual

DATE: December 6, 2016

The current ITSL for carbon disulfide (700 ug/m^3) was established on August 2, 1995 (see attached). The averaging time (AT) assigned to the ITSL at that time was 24 hours, as per the default methodology at that time (Rule 232(2)(b)). The ITSL was based on and consistent with the EPA (1995; IRIS) RfC of the same value, which EPA derived from an occupational study of neurological effects in workers with a mean exposure period of 12.1 years. EPA (1995) applied a total uncertainty factor (UF) = 30, which consisted of a UF = 3 for extrapolation from workers to sensitive individuals, and UF = 10, "...to account for both data base deficiencies, including concern for possible developmental effects at low levels, and to extrapolate to a lifetime exposure." The current file review concludes that the AT for the ITSL may appropriately be set at annual, based on the nature and duration of the key study and the ITSL value derivation, as allowed under Rule 229(2)(b). Therefore, the AT is being changed from 24 hours to annual at this time.

Reference:

EPA. 1995. Integrated Risk Information System (IRIS database). Chemical file for carbon disulfide. Last revised 8/1/95. Still current as of 12/6/16.

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

INTEROFFICE COMMUNICATION

August 2, 1995

TO: Carbon disulfide file (CAS # 75-15-0)

FROM: Gary Butterfield

SUBJECT: Screening level for carbon disulfide

The ITSL for carbon disulfide is based on the EPA RfC. The August 1, 1995 RfC is based on the peripheral nervous system effects observed in the occupational study by Johnson et al (1983). EPA calculated a bench mark dose (BCM) of 55.1 mg/m³. The BCM(HEC) was calculated by adjusting the BCM for 5 days of exposure per week and 10 m³ inhaled during work periods versus 20 m³ for a full day. The resultant RfC is 700 ug/m³. EPA has expressed medium confidence in this RfC.

For further details see the August 1, 1995 IRIS printout.

References:

EPA. 1995 IRIS2 database, updated monthly.

Johnson et al. 1983. Effects on the peripheral nervous system of workers exposed to carbon disulfide. Neurotoxicology 4:53-66.