

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

TO: File for Ethylene glycol monobutyl ether (CAS# 111-76-2)

FROM: Doreen Lehner, Toxics Unit, Air Quality Division

DATE: February 1, 2017

SUBJECT: Ethylene glycol monobutyl ether (CAS# 111-76-2) ITSL change in the averaging time from 24 hours to annual

The initial threshold screening level (ITSL) for ethylene glycol monobutyl ether (EGBE) is 1600 $\mu\text{g}/\text{m}^3$ based on an annual averaging time. The ITSL was originally established on 4/1/2010 and is based on an EPA reference concentration (RfC) of 1.6 mg/m^3 . EPA derived the RfC from an NTP (2000) 2 year inhalation study on mice and rats with the critical effect of hemosiderin deposition in the liver. EPA used benchmark dose statistical software to find the point of departure and then used physiologically based pharmacokinetic modeling to calculate a human equivalent concentration of 16 mg/m^3 . An uncertainty factor of 10 was used to account for the variability of human response to the effects of EGBE. As the key study used to derive the ITSL is a 2 year inhalation study, the averaging time is appropriately set at annual. Therefore, the averaging time is being changed from 24 hours to annual.

References:

Act 451 of 1994, Natural Resources and Environmental Protection Act and Air Pollution Control Rules, Michigan Department of Environmental Quality.

EPA. 2010. Integrated Risk Information System. Ethylene glycol monobutyl ether (EGBE) (2-Butoxyethanol) (CASRN 111-76-2). Available online at: https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?substance_nmbr=500

NTP. 2000. NTP technical report on the toxicology and carcinogenesis studies of 2-butoxyethanol (CAS No. 111-76-2) in F344/N rats and B6C3F₁ mice (inhalation studies). National Toxicology Program. Research Triangle Park, NC. NTP TR 484. Available online at: https://ntp.niehs.nih.gov/ntp/htdocs/lt_rpts/tr484.pdf

MICHIGAN DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENT

INTEROFFICE COMMUNICATION

TO: Ethylene glycol monobutyl ether File (CAS # 111-76-2)
FROM: Gary Butterfield
SUBJECT: Screening Level for Ethylene glycol monobutyl ether
DATE: April 1, 2010

On March 31, 2010 EPA revised the IRIS entry for ethylene glycol monobutyl ether which was originally posted in 1999. A revised RfC of 1600 ug/m³ was changed from the old RfC of 13000 ug/m³. See the IRIS printout for additional details.