

**STATE OF MICHIGAN**  
**Rick Snyder, Governor**



**DEPARTMENT OF ENVIRONMENTAL QUALITY**  
**AIR QUALITY DIVISION**  
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October 10, 2017

**Response to Public Comments for**  
**Tripropylene glycol monobutyl ether (CAS No. 55934-93-5)**

**Summary:**

Based on public comments, the Michigan Department of Environmental Quality (MDEQ), Air Quality Division (AQD) has reviewed the Initial Threshold Screening Level (ITSL) for tripropylene glycol monobutyl ether. The commenter brought a research study to the attention of the AQD. This study was reviewed, and a thorough review of other literature sources was performed. It was determined that the study on which the ITSL was established continues to be the best available study to use for the ITSL derivation and therefore, the ITSL will not be changed. The ITSL is 346  $\mu\text{g}/\text{m}^3$ , annual averaging time.

**Background:**

Revisions to the Air Pollution Control Rules<sup>1</sup> were promulgated December 22, 2016. Subsequently, the AQD published toxic air contaminant screening levels and their basis as required by Rule 230(1). Pursuant to Rule 230(2), the AQD solicited and received public comments on these screening levels for 60 days: February 14 through April 14, 2017. The AQD must respond to these comments within 180 days; the latest date for response is October 11, 2017.

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<sup>1</sup> Air Pollution Control Rules in Michigan Administrative Code promulgated pursuant to Article II Pollution Control, Part 55 (Sections 324.5501-324.5542), Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994. PA 451, as amended (NREPA).

**Comments and Responses:****Comment:**

The commenter identified a reference for consideration by the AQD for ITSL derivation:

Mizell, M.J., Atkin, L., Yano, B.L. 1990. Tripropylene glycol n-butyl ether: 28-day gavage toxicity study in Fischer 344 rats. Unpublished report, study K-005-632-005. Toxicology Research Laboratory, Health and Environmental Sciences. Dow Chemical, Midland, Michigan, USA.

**Response:**

Along with review of the Mizell et al. study (1990), an updated literature review was performed which included a search of the following databases: United States Environmental Protection Agency's (EPA) Integrated Risk Information System, the Registry of Toxic Effects of Chemical Substances, the American Conference of Governmental Industrial Hygienists Threshold Limit Values, National Institute of Occupational Safety and Health Pocket Guide to Hazardous Chemicals, MDEQ Library, International Agency for Research on Cancer Monographs, National Library of Medicine, Health Effects Assessment Summary Tables, National Toxicology Program Status Report, EPA Toxic Substances Control Act Test Submissions database, EPA Superfund Provisional Peer Reviewed Toxicity Values, EPA Acute Exposure Guideline Levels for Airborne Chemicals, EPA High Production Volume Database, United States Department of Labor Occupational Safety and Health Administration Permissible Exposure Limits, Spacecraft Maximum Allowable Concentrations, Agency for Toxic Substances and Disease Registry's Toxicological Profiles, California Office of Environmental Health Hazard Assessment's Reference Exposure Levels, Texas Commission on Environmental Quality Effects Screening Levels, Maximum Workplace Concentrations (Maximale Arbeitsplatzkonzentrationen) for Germany, SciFinder, EPA School Air Toxics Benchmarks, EPA National Air Toxics Assessment Benchmarks, World Health Organization Air Quality Guidelines, and European Chemicals Agency Registered Substances Dossiers.

We agree that the Mizell et al. (1990) study is an important chemical-specific study to review and consider for ITSL development. The Mizell et al. (1990) and the Kirk et al. (1992) studies complement each other well as they both used the same exposure concentrations and exposed similar animal species. However, as compared to the Kirk et al. (1992) study on which the ITSL is based, the Mizell et al. (1990) study is of a shorter duration and showed less clear results concerning chemical-induced kidney toxicity. As a result, the Kirk et al. (1992) study is a more appropriate study for chronic ITSL derivation.

**Summary and Conclusions:**

An updated review was performed, and among the information reviewed, the Mizell et al. (1990) study was also evaluated for ITSL derivation. It was determined that the Kirk et al. (1992) study is still the best available tripropylene glycol monobutyl ether-specific

study to use for ITSL derivation. Therefore, the ITSL of 346  $\mu\text{g}/\text{m}^3$ , annual averaging time will be retained.

The primary AQD reviewer for these comments was Keisha Williams, AQD Toxics Unit toxicologist. The secondary (peer) reviewer was Doreen Lehner, AQD Toxics Unit toxicologist.

### **References:**

Kirk, H.D., Yano, B.L., Haut, K.T., Verschuuren, H.G., Breslin, W.J. 1992. Tripropylene glycol n-butyl ether: 13-week drinking water toxicity study in Fischer 344 rats. Unpublished report, study K-005-632-006. Toxicology Research Laboratory, Health and Environmental Sciences. Dow Chemical, Midland, Michigan, USA.

Mizell, M.J., Atkin, L., Yano, B.L. 1990. Tripropylene glycol n-butyl ether: 28-day gavage toxicity study in Fischer 344 rats. Unpublished report, study K-005-632-005. Toxicology Research Laboratory, Health and Environmental Sciences. Dow Chemical, Midland, Michigan, USA.