

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

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**INTEROFFICE COMMUNICATION**

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TO: Sweetened middle distillate file (CAS # 64741-86-2)

FROM: Keisha Williams, Air Quality Division (AQD)

SUBJECT: Screening level update for sweetened middle distillate

DATE: October 21, 2015

The initial threshold screening level (ITSL) for heavy aromatic solvent naphtha is  $2 \mu\text{g}/\text{m}^3$  (annual averaging time), and this ITSL value was established by a Scientific Advisory Panel (SAP) on June 13, 1994 (SAP, 1994; see attached).

References

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

SAP. 1994. Recommendations of the Scientific Advisory Panel: Sweetened Middle Distillate, CAS Number 64741-86-2. June 13, 1994.

Recommendations of the Scientific Advisory Panel

SWEETENED MIDDLE DISTILLATE

CAS Number 64741-86-2

June 13, 1994

Sweetened middle distillate is described in the U.S. Environmental Protection Agency (EPA) Toxic Substance Control Act (ToSCA) inventory as being a complex combination of hydrocarbons subjected to a sweetening process to convert mercaptans or remove acidic impurities. It consists of hydrocarbons with carbon number length predominately in the range of C<sub>9</sub> to C<sub>20</sub>, and boiling in the range of approximately 150° to 345° C.

No toxicity data was located for sweetened middle distillate.

The Panel's evaluation of data and recommendations provided by the American Petroleum Institute (API) indicated that toxicity data for hydrodesulfurized middle distillate (CAS # 64742-80-9) could be used as the basis for an initial threshold screening level (ITSL) for sweetened middle distillate. The TOSCA description for hydrodesulfurized middle distillate shows that it is relatively similar to sweetened middle distillate. Hydrodesulfurized middle distillate is described as being a complex combination of hydrocarbons treated with hydrogen to convert organic sulfur to hydrogen sulfide for removal. It consists of hydrocarbons with carbon number length predominately in the range of C<sub>11</sub> to C<sub>25</sub>, and boiling in the range of approximately 205° to 400° C.

Although the two ToSCA descriptions are not identical, there is sufficient similarity in the listed properties to make it reasonable to assume toxicity information from hydrodesulfurized middle distillate, could be applicable to sweetened middle distillate.

Therefore, the ITSL for sweetened middle distillate will be established at 2 µg/m<sup>3</sup> with annual averaging, as based on the ITSL for hydrodesulfurized middle distillate. The ITSL derived by this method is relatively low when compared to ITSL5 for other petroleum hydrocarbon fractions.