

## CHAPTER 7. REGULATIONS AND GUIDELINES

Pertinent international and national regulations, advisories, and guidelines regarding MTBE in air, water, and other media are summarized in Table 7-1. This table is not an exhaustive list, and current regulations should be verified by the appropriate regulatory agency.

ATSDR develops MRLs, which are substance-specific guidelines intended to serve as screening levels by ATSDR health assessors and other responders to identify contaminants and potential health effects that may be of concern at hazardous waste sites. See Section 1.3 and Appendix A for detailed information on the MRLs for MTBE.

**Table 7-1. Regulations and Guidelines Applicable to Methyl *tert*-Butyl Ether (MTBE)**

Agency	Description	Information	Reference
<b>Air</b>			
EPA	RfC	3 mg/m <sup>3</sup> (0.83 ppm)	<a href="#">IRIS 1993</a>
WHO	Air quality guidelines	Not listed	<a href="#">WHO 2010</a>
<b>Water &amp; Food</b>			
EPA	Drinking water standards and health advisories	Health-based values not provided <sup>a</sup>	<a href="#">EPA 2018b</a> , <a href="#">EPA 1997</a>
	National primary drinking water regulations	Not listed	<a href="#">EPA 2009</a>
	RfD	Not evaluated	<a href="#">IRIS 1993</a>
WHO	Drinking water quality guidelines	Not derived <sup>b</sup>	<a href="#">WHO 2022</a>
FDA	Substances Added to Food	Not listed <sup>c</sup>	<a href="#">FDA 2022</a>
<b>Cancer</b>			
HHS	Carcinogenicity classification	No data	<a href="#">NTP 2021</a>
EPA	Carcinogenicity classification	No data	<a href="#">IRIS 1993</a>
IARC	Carcinogenicity classification	Group 3 <sup>d</sup>	<a href="#">IARC 1999</a>
<b>Occupational</b>			
ACGIH	TLV (TWA)	50 ppm	ACGIH 2002
OSHA	PEL (8-hour TWA) for general industry, shipyards, and construction	No data	OSHA <a href="#">2021a</a> , <a href="#">2021b</a> , <a href="#">2021c</a>
NIOSH	REL (up to 10-hour TWA)	No data	<a href="#">NIOSH 2018</a>

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Agency	Description	Information	Reference
<b>Emergency Criteria</b>			
EPA	AEGLs-air		<a href="#">EPA 2018c</a>
	AEGL 1 <sup>e</sup>		
	10-minute, 30-minute, 60-minute, 4-hour, 8-hour	50 ppm	
	AEGL 2 <sup>e</sup>		
	10-minute	1,400 ppm	
	30-minute	800 ppm	
	60-minute	570 ppm	
	4-hour, 8-hour	400 ppm	
	AEGL 3 <sup>e</sup>		
	10-minute	13,000 ppm <sup>f</sup>	
	30-minute	7,500 ppm <sup>g</sup>	
	60-minute	5,300 ppm <sup>g</sup>	
	4-hour	2,700 ppm <sup>g</sup>	
8-hour	1,900 ppm <sup>g</sup>		
DOE	PACs-air		<a href="#">DOE 2018a</a>
	PAC-1 <sup>h</sup>	50 ppm	
	PAC-2 <sup>h</sup>	570 ppm	
	PAC-3 <sup>h</sup>	5,300 ppm	

<sup>a</sup>Advisory recommends that keeping contamination levels in the range of 20–40 µg/L or below (odor/taste thresholds) to protect consumer acceptance of the water would also provide a margin of safety from toxic effects.

<sup>b</sup>Reason for not establishing guideline value: guideline would be significantly higher than concentrations at which MTBE would be detected by odor.

<sup>c</sup>The Substances Added to Food inventory replaces EAFUS and contains the following types of ingredients: food and color additives listed in FDA regulations, flavoring substances evaluated by FEMA or JECFA, GRAS substances listed in FDA regulations, substances approved for specific uses in food prior to September 6, 1958, substances that are listed in FDA regulations as prohibited in food, delisted color additives, and some substances "no longer FEMA GRAS."

<sup>d</sup>Group 3: not classifiable as to its carcinogenicity to humans.

<sup>e</sup>Definitions of AEGL terminology are available from EPA (2018d).

<sup>f</sup>Value is higher than 50% of the LEL of MTBE in air (16,000 ppm); therefore, extreme safety considerations on the hazard of explosion must be taken into account.

<sup>g</sup>Value is higher than 10% of the LEL of MTBE in air (16,000 ppm); therefore, safety considerations on the hazard of explosion must be taken into account.

<sup>h</sup>Definitions of PAC terminology are available from DOE (2018b).

ACGIH = American Conference of Governmental Industrial Hygienists; AEGL = acute exposure guideline levels; DOE = Department of Energy; EAFUS = Everything Added to Food in the United States; EPA = Environmental Protection Agency; FDA = Food and Drug Administration; FEMA = Flavor and Extract Manufacturers Association of the United States; GRAS = generally recognized as safe; HHS = Department of Health and Human Services; IARC = International Agency for Research on Cancer; IRIS = Integrated Risk Information System; JECFA = Joint FAO/WHO Expert Committee on Food Additives; LEL = lower explosive limit; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; PAC = protective action criteria; PEL = permissible exposure limit; REL = recommended exposure limit; RfC = inhalation reference concentration; RfD = oral reference dose; TLV = threshold limit value; TWA = time-weighted average; WHO = World Health Organization