CHAPTER 7. REGULATIONS AND GUIDELINES

Pertinent international and national regulations, advisories, and guidelines regarding MBOCA 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 MBOCA.

Table 7-1. Regulations and Guidelines Applicable to MBOCA

Agency	Description	Information	Reference
	Air		
EPA	RfC	No data	IRIS 2017
WHO	Air quality guidelines	No data	WHO 2010
	Water & Food		
EPA	Drinking water standards and health advisories	No data	EPA 2012
	National primary drinking water regulations	No data	EPA 2009
	RfD	No data	IRIS 2017
WHO	Drinking water quality guidelines	No data	WHO 2017
FDA	EAFUS	No data[a]	FDA 2013
	Cancer		
ACGIH	Carcinogenicity classification	A2[b,c]	ACGIH 2001, 2016
HHS	Carcinogenicity classification	Reasonably anticipated to be a human carcinogen[d]	NTP 2016
EPA	Carcinogenicity classification	No data	IRIS 2017
IARC	Carcinogenicity classification	Group 1[e,f]	IARC 2012, 2017
	Occupational		
ACGIH	TLV	0.01 ppm[g]	ACGIH 2016
OSHA	PEL (8-hour TWA) for general industry, shipyards and construction	No data	OSHA 2016a, 2016b, 2016c
NIOSH	REL (up to 10-hour TWA)	0.003 mg/m^3 [g,h]	NIOSH 2016

Table 7-1. Regulations and Guidelines Applicable to MBOCA

Agency	Description	Information	Reference
	Emergency Criteria		
EPA	AEGLs-air	No data	EPA 2016
AIHA	ERPGs	No data	AIHA 2015
DOE	PACs-air		DOE 2016a
	PAC-1[i]	0.03 ppm	
	PAC-2[i]	0.94 ppm	
	PAC-3[i]	21 ppm	

[a]The EAFUS list of substances contains ingredients added directly to food that FDA has either approved as food additives or listed or affirmed as GRAS.
[b]A2: Suspected human carcinogen.
[c]Based on clear evidence of lung and liver tumors in rats and mice and bladder tumors in dogs following prolonged exposure.
[d]Based on sufficient evidence of carcinogenicity from studies in experimental animals.
[e]Group 1: Carcinogenic to humans.
[f]Based on sufficient evidence in experimental animals for carcinogenicity and strong mechanistic evidence indicating carcinogenicity.
[g]Skin notation: Potential significant contribution to the overall exposure by the cutaneous route.
[h]Potential occupational carcinogen.
[i]Definitions of PAC terminology are available from U.S. DOE (2016b).

ACGIH = American Conference of Governmental Industrial Hygienists; AEGL = acute exposure guideline levels; AIHA = American Industrial Hygiene Association; DOE = Department of Energy; EAFUS = Everything Added to Food in the United States; EPA = Environmental Protection Agency; ERPG = emergency response planning guidelines; FDA = Food and Drug Administration; GRAS = generally recognized as safe; HHS = Department of Health and Human Services; IARC = International Agency for Research on Cancer; IRIS = Integrated Risk Information System; MBOCA = 4,4'-methylenebis(2-chloroaniline); 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 values; TWA = time-weighted average; WHO = World Health Organization