CHAPTER 7. REGULATIONS AND GUIDELINES

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

Table 7-1. Regulations and Guidelines Applicable to Endrin

Agency	Description	Information	Reference
	Air		
EPA	RfC	Not evaluated	IRIS 2002
WHO	Air quality guidelines	Not listed	WHO 2010
	Water & Food		
EPA	Drinking water standards and health advisories		EPA 2018a
	1-Day health advisory (10-kg child)	0.02 mg/L	
	10-Day health advisory (10-kg child)	0.005 mg/L	
	DWEL	0.01 mg/L	
	Lifetime health advisory	0.002 mg/L	
	10^{-4} Cancer risk	No data	
	National primary drinking water regulations		EPA 2009
	MCL	0.002 mg/L	
	PHG	0.002 mg/L	
	RfD	$3x10^{-4}$ mg/kg/day	IRIS 2002
WHO	Drinking water quality guidelines		WHO 2017
	Guideline value	0.0006 mg/L (0.6 µg/L)	
	PTDI	0.2 µg/kg body weight	
FDA	Substances Added to Food[a]	No data	FDA 2020
	Allowable level in bottled water	0.002 mg/L	FDA 2017c
	Cancer		
HHS	Carcinogenicity classification	No data	NTP 2016
EPA	Carcinogenicity classification	D[b]	IRIS 2002
IARC	Carcinogenicity classification	Group 3[c]	IARC 1987

Table 7-1. Regulations and Guidelines Applicable to Endrin

Agency	Description	Information	Reference
	Occupational		
OSHA	PEL (8-hour TWA) for general industry, shipyards and construction	0.1 mg/m^3 [d]	OSHA 2019a, 2019b, 2019c
NIOSH	REL (up to 10-hour TWA)	0.1 mg/m^3 [d]	NIOSH 2016
	IDLH	2 mg/m^3	NIOSH 1994
	Emergency Criteria		
EPA	AEGLs-air	Not listed	EPA 2018b
DOE	PACs-air		DOE 2018a
	PAC-1[e]	1.8 mg/m^3	
	PAC-2[e]	20 mg/m^3	
	PAC-3[e]	2,000 mg/m^3	

[a]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 from use in food, delisted color additives, and some substances "no longer FEMA GRAS."
[b]Group D: not classifiable as to human carcinogenicity.
[c]Group 3: not classifiable as to its carcinogenicity to humans.
[d]Skin designation.
[e]Definitions of PAC terminology are available from U.S. Department of Energy (DOE 2018b).

AEGL = acute exposure guideline levels; DOE = Department of Energy; DWEL = drinking water equivalent level; 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; IDLH = Immediately Dangerous to Life or Health; IRIS = Integrated Risk Information System; JECFA = Joint FAO/WHO Expert Committee on Food Additives; MCL = maximum contaminant level; 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; PHG = public health goal; PTDI = provisional tolerable daily intake; REL = recommended exposure limit; RfC = inhalation reference concentration; RfD = oral reference dose; TWA = time-weighted average; WHO = World Health Organization