CHAPTER 7. REGULATIONS AND GUIDELINES

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

Table 7-1. Regulations and Guidelines Applicable to Acrolein

Agency	Description	Information	Reference
	Air		
EPA	RfC	$2x10^{-5}$ mg/m^3 ($1x10^{-5}$ ppm)	IRIS 2003
WHO	Air quality guidelines	Not listed	WHO 2010
	Water & Food		
EPA	Drinking water standards and health advisories	Not listed	EPA 2018a
	National primary drinking water regulations	Not listed	EPA 2023c
	RfD	$5x10^{-4}$ mg/kg/day	IRIS 2003
WHO	Drinking water quality guidelines	Not listed	WHO 2022
FDA	Food additives permitted for direct addition to food for human consumption	Acrolein used to prepare modified food starch must not exceed 0.6%	FDA 2024
	Cancer		
HHS	Carcinogenicity classification	Not evaluated	NTP 2021
EPA	Carcinogenicity classification	Data are inadequate for an assessment of human carcinogenic potential	IRIS 2003
IARC	Carcinogenicity classification	Group 2A[a]	IARC 2021
	Occupational		
OSHA	PEL (8-hour TWA) for general industry, shipyards, and construction	0.1 ppm (0.25 mg/m^3)	OSHA 2023a, 2023b, 2023c
NIOSH	REL (up to 10-hour TWA) STEL (15-minute TWA) IDLH	0.1 ppm (0.25 mg/m^3)[b] 0.3 ppm (0.8 mg/m^3) 2 ppm	NIOSH 2019

Table 7-1. Regulations and Guidelines Applicable to Acrolein

Agency	Description	Information	Reference
	Emergency Criteria		
EPA	AEGLs-air		EPA 2018b
	AEGL 1[c]		
	10-minute, 30-minute, 60-minute, 4-hour, 8-hour	0.030 ppm	
	AEGL 2[c]		
	10-minute	0.44 ppm	
	30-minute	0.18 ppm	
	60-minute	0.10 ppm	
	4-hour	0.10 ppm	
	8-hour	0.10 ppm	
	AEGL 3[c]		
	10-minute	6.2 ppm	
	30-minute	2.5 ppm	
	60-minute	1.4 ppm	
	4-hour	0.48 ppm	
	8-hour	0.27 ppm	
DOE	PACs-air		DOE 2024a
	PAC-1[d]	0.03 ppm	
	PAC-2[d]	0.1 ppm	
	PAC-3[d]	1.4 ppm	

[a]Group 2A: probably carcinogenic to humans.
[b]NIOSH recommends that careful consideration be given to reducing exposures to acrolein due to limited studies that indicate that these substances have chemical reactivity and mutagenicity similar to acetaldehyde and malonaldehyde (NIOSH 2018).
[c]Definitions of AEGL terminology are available from EPA (2018c).
[d]Definitions of PAC terminology are available from DOE (2024b).

AEGL = acute exposure guideline levels; DOE = Department of Energy; EPA = Environmental Protection Agency; FDA = Food and Drug Administration; 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; 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; STEL = short-term exposure limit; TWA = time-weighted average; WHO = World Health Organization