

CHAPTER 7. REGULATIONS AND GUIDELINES

Pertinent international and national regulations, advisories, and guidelines regarding *n*-hexane 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 *n*-hexane.

Table 7-1. Regulations and Guidelines Applicable to *n*-Hexane

Agency	Description	Information	Reference
Air			
EPA	RfC	0.7 mg/m ³ (0.2 ppm)	IRIS 2005
	Provisional peer reviewed toxicity values		
	Provisional subchronic RfC	2 mg/m ³ (0.6 ppm)	EPA 2009
WHO	Air quality guidelines	No data	WHO 2010
Water & Food			
EPA	Drinking water standards and health advisories		EPA 2018a
	1-Day health advisory (10-kg child)	10 mg/L	
	10-Day health advisory (10-kg child)	4 mg/L	
	Lifetime health advisory	No data	
	National primary drinking water regulations	Not listed	EPA 2023b
	RfD	Not assessed	IRIS 2005
	Provisional peer reviewed toxicity values		EPA 2009
	Provisional subchronic RfD	0.3 mg/kg/day	
WHO	Drinking water quality guidelines	No data	WHO 2022
FDA	Substances added to food (formerly EAFUS)	Allowed as extractant in the preparation of several food/color additives, with restrictions on residue levels; allowed in some indirect food additives (particular coatings used in food packaging)	FDA 2024
Cancer			
HHS	Carcinogenicity classification	Not evaluated	NTP 2021
EPA	Carcinogenicity classification	Inadequate information to assess carcinogenic potential	IRIS 2005

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Agency	Description	Information	Reference	
IARC	Carcinogenicity classification	Not evaluated	IARC 2024	
Occupational				
OSHA	PEL (8-hour TWA) for general industry, shipyards, and construction	500 ppm (1800 mg/m ³)	OSHA 2023a , 2023b , 2023c	
NIOSH	REL (up to 10-hour TWA)	50 ppm (180 mg/m ³)	NIOSH 2019	
	IDLH	1,100 ppm ^a	NIOSH 1994	
Emergency Criteria				
EPA	AEGLs-air		EPA 2018b	
	AEGL 1 ^b			
		10-minute, 30-minute, 60-minute, 4-hour, 8-hour	No recommendation due to insufficient data	
	AEGL 2 ^b			
		10-minute	4,000 ppm ^c	
		30-minute	2,900 ppm ^c	
		60-minute	2,900 ppm ^c	
		4-hour	2,900 ppm ^c	
		8-hour	2,900 ppm ^c	
	AEGL 3 ^b			
		10-minute	12,000 ppm ^d	
		30-minute	8,600 ppm ^e	
		60-minute	8,600 ppm ^e	
	4-hour	8,600 ppm ^e		
	8-hour	8,600 ppm ^e		
DOE	PACs-air		DOE 2024a	
	PAC-1 ^f	260 ppm		
	PAC-2 ^f	2,900 ppm ^c		
	PAC-3 ^f	8,600 ppm ^e		

^aBased strictly on safety considerations; IDLH is 10% of LEL of *n*-hexane in air (11,000 ppm).

^bDefinitions of AEGL terminology are available from EPA (2018c).

^cValue is greater than 10% of the LEL; safety considerations against explosion hazard must be taken into account.

^dValue is greater than the LEL; extreme safety considerations against explosion hazard must be taken into account.

^eValue is greater than 50% of the LEL; extreme safety considerations against explosion hazard must be taken into account.

^fDefinitions of PAC terminology are available from DOE (2024b).

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; 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; 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; TWA = time-weighted average; WHO = World Health Organization