CHAPTER 7. REGULATIONS AND GUIDELINES

Pertinent international and national regulations, advisories, and guidelines regarding 2-hexanone 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 2-hexanone.

Table 7-1. Regulations and Guidelines Applicable to 2-Hexanone

Agency	Description	Information	Reference
	Air		
EPA	RfC	$3x10^{-2}$ mg/m^3 [a]	IRIS 2009
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 2009b
	RfD	$5x10^{-3}$ mg/kg-day[b]	IRIS 2009
WHO	Drinking water quality guidelines	Not listed	WHO 2017
FDA	Substances Added to Food	Not listed[c]	FDA 2019
	Cancer		
HHS	Carcinogenicity classification	No data	NTP 2016
EPA	Carcinogenicity classification	Inadequate information to assess carcinogenic potential	IRIS 2009
IARC	Carcinogenicity classification	Not listed	IARC 2019
	Occupational		
OSHA	PEL (8-hour TWA) for general industry, shipyards, and construction	100 ppm (410 mg/m^3)	OSHA 2018a, 2018b, 2018c
NIOSH	REL (up to 10-hour TWA)	1 ppm (4 mg/m^3)	NIOSH 2018
	IDLH	1,600 ppm	NIOSH 1994

Table 7-1. Regulations and Guidelines Applicable to 2-Hexanone

Agency	Description	Information	Reference
	Emergency Criteria		
EPA	AEGLs-air	No data	EPA 2018b
DOE	PACs-air		DOE 2018a
	PAC-1[d]	10 ppm	
	PAC-2[d]	830 ppm	
	PAC-3[d]	5,000 ppm	

[a]The RfC is based on a $BMCL_{05(HEC)}$ of 90 mg/m^3 for reduced motor conduction velocity of the sciatic-tibial nerve in monkeys in a subchronic inhalation study.
[b]The RfD is based on a $BMDL_{10}$ of 5 mg/kg-day for axonal swelling of the peripheral nerve in rats in a chronic drinking water study.
[c]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."
[d]Definitions of PAC terminology are available from U.S. Department of Energy (DOE 2018b).

AEGL = acute exposure guideline levels; BMCL = 95% lower confidence limit on the benchmark concentration; BMDL = 95% lower confidence limit on the benchmark dose; 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; GRAS = generally recognized as safe; HEC = human equivalent concentration; 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 Expert Committee on Food Additives; 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