

7. REGULATIONS AND ADVISORIES

Because of its potential to cause adverse health effects in exposed people, a number of regulations and guidelines have been established for acrylonitrile by various national and state agencies. These values are summarized in Table 7-1.

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TABLE 7-1. Regulations and Guidelines Applicable to Acrylonitrile

Agency	Description	Value ^a	Reference
IARC	Carcinogenic classification	Group 2A ^b	IARC 1982
<u>National</u>			
Regulations:			
a. Air:			
OSHA	PEL TWA Ceiling	2 ppm 10 ppm	OSHA 1978a, 1978b 29 CFR 1910.1045
b. Water:			
EPA OWRS	General permits under the NPDES	NA	40 CFR 122 Appendix D Table II
	Criteria and Standards for the NPDES	NA	40 CFR 125
	General pretreatment regulations for existing and new sources of pollution	NA	40 CFR 403
	Hazardous substance Reportable quantity	NA 100 lb	EPA 1985b, (40 CFR 116) 40 CFR 117.3
c. Nonspecific media:			
EPA OERR	Reportable quantity	100 lb	EPA 1989c, (40 CFR 302.4)
	Extremely hazardous substance list threshold planning quantity	10,000 lb	EPA 1987d, (40 CFR 355)
EPA OPP	Restricted use pesticide	NA	40 CFR 162.31
EPA OSW	Hazardous waste constituent (Appendix VIII)	NA	EPA 1980c, (40 CFR 261)
	Groundwater monitoring list (Appendix IX)	NA	EPA 1987e, (40 CFR 264)
	Restriction on land disposal, proposed treatment standards	NA	EPA 1989b, (40 CFR 268.10)
EPA OTS	Toxic chemical release reporting	NA	EPA 1988, (40 CFR 372)
FDA	Use of copolymers as components of food packaging materials	NA	21 CFR 177.1030, 177.1040
Guidelines:			
a. Air:			
ACGIH	TLV TWA	2 ppm (4.5 mg/m ³)	ACGIH 1986
NIOSH	Recommended exposure limit guidelines for occupational exposure		NIOSH 1985, 1988b
	TWA	1 ppm	
	Ceiling (15 minutes)	10 ppm	
	IDLH	4000 ppm	
b. Water:			
EPA OWRS	Ambient water quality criteria		
	Ingesting water and organisms	5.8x10 ⁻⁵ mg/L	EPA 1980d
	Ingesting organisms only	6.5x10 ⁻⁴ mg/L	EPA 1980d

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TABLE 7-1 (Continued)

Agency	Description	Value	Reference
c. Other:			
EPA	Carcinogenic classification	Group B1 ^c	IRIS 1988
	Cancer slope factor: oral	5.4×10^{-1} (mg/kg/day) ⁻¹	IRIS 1988
	inhalation	2.4×10^{-1} (mg/kg/day) ⁻¹	
<u>State</u>			
Regulations:			
a. Air:			
	Acceptable ambient air concentration		NATICH 1988
Connecticut		22 $\mu\text{g}/\text{m}^3$ (8 hr)	
Florida (Tampa)		0.0450 mg/m ³ (8 hr)	
Indiana		0.0147 $\mu\text{g}/\text{m}^3$ (annual)	
Massachusetts		0.01 $\mu\text{g}/\text{m}^3$ (annual)	West 1989
		1.18 $\mu\text{g}/\text{m}^3$ (24 hour)	
Nevada		0.1070 mg/m ³ (8 hr)	
North Carolina		0.1450 $\mu\text{g}/\text{m}^3$ (annual)	
North Dakota		0 (B.A.C.T.)	
New York		15 $\mu\text{g}/\text{m}^3$ (1 yr)	
Pennsylvania (Philadelphia)		11.30 $\mu\text{g}/\text{m}^3$ (1 yr)	
South Carolina		22.50 $\mu\text{g}/\text{m}^3$ (annual)	
Virginia		45.0 $\mu\text{g}/\text{m}^3$ (24 hr)	
b. Water:			
	Drinking water		FSTRAC 1988
Arizona		10 $\mu\text{g}/\text{L}$	
Connecticut		35 $\mu\text{g}/\text{L}$	
Kansas		3.8 $\mu\text{g}/\text{L}$	
Minnesota		0.67 $\mu\text{g}/\text{L}$	

^a Numerical values are provided in this column, when available. However, many regulations list chemicals and/or involve requirements too complex for inclusion here. In these cases, NA (Not Applicable) is inserted in this column. The cited references provide details of the regulations.

^bGroup 2A: Probably carcinogenic to humans.

^cGroup B1: Probable human carcinogen.

IARC = International Agency for Research on Cancer; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit; TWA = Time-Weighted Average; EPA = Environmental Protection Agency; OWRS = Office of Water Regulations and Standards; NPDES = National Pollutant Discharge Elimination System; NA = not applicable; OERR = Office of Emergency and Remedial Response; OPP = Office of Pesticide Programs; OSW = Office of Solid Wastes; OTS = Office of Toxic Substances; FDA = Food and Drug Administration; ACGIH = American Conference of Governmental Industrial Hygienists; TLV = Threshold Limit Value; NIOSH = National Institute for Occupational Safety and Health; IDLH = Immediately Dangerous to Life or Health Level; B.A.C.T. = Best Available Control Technology.

