

## 7. REGULATIONS AND ADVISORIES

The international, national, and state regulations and guidelines regarding JP-5 and JP-8 in air, water, and other media are summarized in Table 7- 1. There are only a few regulations specific to JP-5 and JP-8; however, a number of regulations exist for kerosene and other components of jet fuels.

An intermediate inhalation MRL of 3 mg/m<sup>3</sup> was derived for JP-5 and JP-8 from the study by Gaworski et al. (1984) in which hepatocellular fatty changes and vacuolization were observed in mice exposed to JP-5 at 150 mg/m<sup>3</sup> continuously for 90 days. Similar effects on the liver were also observed at 750 mg/m<sup>3</sup>.

EPA has not verified a reference dose (RfD) or reference concentration (RfC) for JP-5 or JP-8 (IRIS 1998).

Under the Hazardous Materials Transportation Act, aviation fuel is designated as a hazardous substance subject to special requirements for packaging, labeling, and transportation (DOT 1989a, 1989b). EPA has established guidelines to control air pollution from aircraft and aircraft engines (EPA 1982).

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**TABLE 7-1. Regulations and Guidelines Applicable to Jet Fuels<sup>a</sup>**

Agency	Description	Information	References
<b><u>INTERNATIONAL</u></b>			
IARC	Carcinogenic classification of jet fuels	Group 3 <sup>b</sup>	IARC 1998
<b><u>NATIONAL</u></b>			
<b>Regulations:</b>			
<b>a. Air:</b>			
AFOOSH	PEL TWA Petroleum distillates (naphtha)	400 ppm	Air Force 1989b
EPA	STEL (15 minutes) Petroleum distillates (naphtha)	500 ppm	EPA 1995
NIOSH	NAAQS TWA Petroleum distillates (naphtha) Kerosene	None listed (85 ppm) 350 mg/m <sup>3</sup> 100 mg/m <sup>3</sup>	NIOSH 1997
OSHA	Ceiling REL (15 minutes) Petroleum distillates (naphtha) Kerosene PEL TWA Petroleum distillates (naphtha) Kerosene	438 ppm (1,800 mg/m <sup>3</sup> ) None listed 500 ppm (2,000 µg/m <sup>3</sup> ) None listed	OSHA 1997 (29 CFR 1910.1000)
<b>b. Other:</b>			
DOT	Hazardous Material Transportation Act: Aviation fuel is designated as a hazardous material subject to requirements for packaging, shipping, and transporting	Yes	DOT 1989a (49 CFR 172.101 Appendix A); DOT 1989b
EPA	Toxic Substances Control Act: Manufacturers and processors of the C <sub>9</sub> aromatic hydrocarbon fraction must test this fraction for the following: Neurotoxicity, mutagenicity, developmental toxicity, reproductive effects, and oncogenicity	Yes	EPA 1991a (40 CFR 799.2175); EPA 1987
<b>Guidelines:</b>			
<b>a. Air:</b>			
EPA	Control of air pollution from aircraft and aircraft engines	Yes	EPA 1982 (40 CFR 87)
ACGIH	Threshold Limit Values (TWA)	None listed	ACGIH 1997
<b>b. Other:</b>			
EPA	Domestic water supply must be virtually free from oil and grease, particularly from the tastes and odors that emanate from petroleum products	Yes	EPA 1986
	For aquatic life, levels must be ≤ 0.01 of the lowest continuous flow 96-hour LC <sub>50</sub>	Yes	EPA 1986

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TABLE 7-1 (continued)

Agency	Description	Information	References
<u>NATIONAL</u> (Cont'd)			
	Clean Water Act: Oil and grease are designated as conventional pollutants. Effluent limitations for oil and grease (polynuclear aromatic hydrocarbons) exist for almost all point sources under the general pretreatment standards for new and existing sources	Yes	EPA 1988a (40 CFR 403.2); EPA 1988b
EPA	Drinking water regulations and health advisories		EPA 1996
	MCLG	None listed	EPA 1996
	MCL	None listed	
EPA	Title 40 protection of environment	None listed	EPA 1996
EPA	CERCLA Reportable Quantity	None listed	EPA 1996
EPA	Toxic chemical release reporting: Community right-to-know	None listed	EPA 1997
<u>STATE</u>			
Regulations and Guidelines:			
a. Air:			
	Acceptable ambient air concentrations (Navy Fuels JP-5)		NATICH 1991
Connecticut	(8 hours)	$2.00 \times 10^3 \mu\text{g}/\text{m}^3$	
Maryland		0.00	
Oklahoma	(24 hours)	$1.00 \times 10^4 \mu\text{g}/\text{m}^3$	
Texas	(30 minutes)	$1.00 \times 10^3 \mu\text{g}/\text{m}^3$	
Texas	(annual)	$1.00 \times 10^2 \mu\text{g}/\text{m}^3$	
	Regulations on hydrocarbon emissions (including kerosene)		CELDS 1991
Connecticut		Yes	
Kansas		Yes	
Wisconsin		Yes	
	Regulations on VOCs		CELDS 1991
Alabama		Yes	
Arizona		Yes	
Florida		Yes	
Maine		Yes	
Maryland		Yes	
Michigan		Yes	
New Jersey		Yes	
South Carolina		Yes	
Virginia		Yes	
Texas		Yes	
Washington, DC		Yes	
Maine	Regulations on the open burning of fuel oils (kerosene)	Yes	CELDS 1991

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TABLE 7-1 (continued)

Agency	Description	Information	References
<b>STATE (Cont'd)</b>			
b. Water:			
Alaska	Aquatic life criterion for total hydrocarbons in marine and surface waters	15 µg/L	State of Alaska 1989
	Aquatic life criterion for aromatic hydrocarbons in marine and surface waters	10 µg/L	State of Alaska 1989
New York	Maximum contaminant level of kerosene in drinking water	50 µg/mL	State of New York 1989
South Dakota	Water quality standard for all petroleum products in surface waters	10 mg/L	State of South Dakota 1989
Virginia	Water quality standard for petroleum hydrocarbons in groundwater	1 mg/L	Commonwealth of Virginia 1988
Wyoming	Water quality standard for all surface waters classes	10 mg/L	State of Wyoming 1990
c. Other:			
	Regulations on the transport of flammable/hazardous liquids (petroleum distillates or VOCs)	Yes	CELDS 1991
California	Regulations on leaking underground fuel tanks	Yes	CELDS 1991

<sup>a</sup>International, national, and state regulations and guidelines regarding JP-5, JP-8, and kerosene in air, water, and other media

<sup>b</sup>Group 3 = Not classifiable as to its carcinogenicity to humans

AFOSH = Air Force Office of Health and Safety; DOT = Department of Transportation; EPA = Environmental Protection Agency; IARC = International Agency for Research on Cancer; IDLH = Immediately Dangerous to Life or Health; LC<sub>50</sub> = lethal concentration (50% kill); NIOSH = National Institute for Occupational Safety and Health; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit; REL = Recommended Exposure Limit; STEL = Short-Term Exposure Limit; TWA = Time-Weighted Average; VOC = Volatile Organic Compound