**TABLE 9**
**RECOMMENDED AND ADOPTED HUMAN BODY WEIGHT VALUES ***

| Chemical | EPA Recommended Body Weight (kg) | ADEM Adopted Body Weight (kg) |
|---|---|---|
| 1,1,1-Trichloroethane<br>71556 | 80 | |
| 1,1,2,2-Tetrachloroethane<br>79345 | 80 | 70 |
| 1,1,2-Trichloroethane<br>79005 | 80 | 70 |
| 1,1-Dichloroethylene<br>75354 | 80 | 70 |
| 1,2,4-Trichlorobenzene<br>120821 | 80 | |
| 1,2-Dichlorobenzene<br>95501 | 80 | 70 |
| 1,2-Dichloroethane<br>107062 | 80 | 70 |
| 1,2-Dichloropropane<br>78875 | 80 | 70 |
| 1,2-Diphenylhydrazine<br>122667 | 80 | 70 |
| 1,3-Dichlorobenzene<br>541731 | 80 | 70 |
| 1,3-Dichloropropene<br>542756 | 80 | 70 |
| 1,4-Dichlorobenzene<br>106467 | 80 | 70 |
| 2,3,7,8-TCDD (Dioxin)<br>1746016 | 70 | 70 |
| 2,4,6-Trichlorophenol<br>88062 | 80 | 70 |



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| Chemical | EPA Recommended Body Weight (kg) | ADEM Adopted Body Weight (kg) |
|---|---|---|
| 2,4-Dichlorophenol<br>120832 | 80 | 70 |
| 2,4-Dimethylphenol<br>105679 | 80 | 70 |
| 2,4-Dinitrophenol<br>51285 | 80 | 70 |
| 2,4-Dinitrotoluene<br>121142 | 80 | 70 |
| 2-Chloronaphthalene<br>91587 | 80 | 70 |
| 2-Chlorophenol<br>95578 | 80 | 70 |
| 2-Methyl-4,6-Dinitrophenol<br>534521 | 80 | 70 |
| 3,3'-Dichlorobenzidine<br>91941 | 80 | 70 |
| 3-Methyl-4-Chlorophenol<br>59507 | 80 | |
| Acenaphthene<br>83329 | 80 | 70 |
| Acrolein<br>107028 | 80 | 70 |
| Acrylonitrile<br>107131 | 80 | 70 |
| Aldrin<br>309002 | 80 | 70 |
| alpha-Hexachlorocyclohexane (HCH)<br>319846 | 80 | 70 |
| alpha-Endosulfan<br>959988 | 80 | 70 |

| Chemical | EPA Recommended Body Weight (kg) | ADEM Adopted Body Weight (kg) |
|---|---|---|
| Anthracene<br>120127 | 80 | 70 |
| Antimony<br>7440360 | 70 | 70 |
| Arsenic<br>7440382 | 70 | 70 |
| Asbestos<br>1332214 | 70 | 70 |
| Benzene<br>71432 | 80 | 70 |
| Benzidine<br>92875 | 80 | 70 |
| Benzo(a)anthracene<br>56553 | 80 | 70 |
| Benzo(a)pyrene<br>50328 | 80 | 70 |
| Benzo(b)fluoranthene<br>205992 | 80 | 70 |
| Benzo(k)fluoranthene<br>207089 | 80 | 70 |
| beta-Hexachlorocyclohexane (HCH)<br>319857 | 80 | 70 |
| beta-Endosulfan<br>33213659 | 80 | 70 |
| Bis(2-Chloro-1-Methylethyl) Ether<br>108601 | 80 | 70 |
| Bis(2-Chloroethyl) Ether<br>111444 | 80 | 70 |
| Bis(2-Ethylhexyl) Phthalate<br>117817 | 80 | 70 |

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| Chemical | EPA Recommended Body Weight (kg) | ADEM Adopted Body Weight (kg) |
|---|---|---|
| Bromoform<br>75252 | 80 | 70 |
| Butylbenzyl Phthalate<br>85687 | 80 | 70 |
| Carbon Tetrachloride<br>56235 | 80 | 70 |
| Chlordane<br>57749 | 80 | 70 |
| Chlorobenzene<br>108907 | 80 | 70 |
| Chlorodibromomethane<br>124481 | 80 | 70 |
| Chloroform<br>67663 | 80 | 70 |
| Chrysene<br>218019 | 80 | 70 |
| Copper<br>7440508 | 70 | 70 |
| Cyanide<br>57125 | 80 | 70 |
| Dibenzo(a,h)anthracene<br>53703 | 80 | 70 |
| Dichlorobromomethane<br>75274 | 80 | 70 |
| Dieldrin<br>60571 | 80 | 70 |
| Diethyl Phthalate<br>84742 | 80 | 70 |
| Dimethyl Phthalate<br>131113 | 80 | 70 |

Table 9 - Alabama (page 4 of 8)

| Chemical | EPA Recommended Body Weight (kg) | ADEM Adopted Body Weight (kg) |
|---|---|---|
| Di-n-Butyl Phthalate<br>84742 | 80 | 70 |
| Endosulfan Sulfate<br>1031078 | 80 | 70 |
| Endrin<br>72208 | 80 | 70 |
| Endrin Aldehyde<br>7421934 | 80 | 70 |
| Ethylbenzene<br>100414 | 80 | 70 |
| Fluoranthene<br>206440 | 80 | 70 |
| Fluorene<br>86737 | 80 | 70 |
| gamma-Hexachlorocyclohexane (HCH)<br>[Lindane]<br>58899 | 80 | 70 |
| Heptachlor<br>76448 | 80 | 70 |
| Heptahlor Epoxide<br>1024573 | 80 | 70 |
| Hexachloroenzene<br>118741 | 80 | 70 |
| Hexachlorobutadiene<br>87683 | 80 | 70 |
| Hexachlorocyclopentadiene<br>77474 | 80 | 70 |
| Hexachloroethane<br>67721 | 80 | 70 |
| Indeno(1,2,3-cd)pyrene<br>193395 | 80 | 70 |

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| Chemical | EPA Recommended Body Weight (kg) | ADEM Adopted Body Weight (kg) |
|---|---|---|
| Isophorone<br>78591 | 80 | 70 |
| Methylmercury<br>22967926 | | |
| Methyl Bromide<br>74839 | 80 | 70 |
| Methylene Chloride<br>75092 | 80 | 70 |
| Nickel<br>744000 | 70 | 70 |
| Nitrobenzene<br>98953 | 80 | 70 |
| N-Nitrosodimethylamine<br>62759 | 70 | 70 |
| N-Nitrosodiphenylamine<br>86306 | 70 | 70 |
| N-Nitrosodi-n-Propylamine<br>621647 | 70 | 70 |
| Pentachlorophenol<br>87865 | 80 | 70 |
| Phenol<br>108952 | 80 | 70 |
| p,p'-Dichlorodiphenyldichloroethane (DDD)<br>72548 | 80 | 70 |
| p,p -Dichlorodiphenyldichloroethylene (DDE)<br>72559 | 80 | 70 |
| p,p'-Dichlorodiphenyltrichloroethane (DDT)<br>50293 | 80 | 70 |
| Polychlorinated Biphenyls (PCBs)<br>1336363 | 70 | 70 |

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| Chemical | EPA Recommended Body Weight (kg) | ADEM Adopted Body Weight (kg) |
|---|---|---|
| Pyrene<br>129000 | 80 | 70 |
| Selenium<br>7782492 | 70 | 70 |
| Tetrachloroethylene<br>127184 | 80 | 70 |
| Thallium<br>7440280 | 70 | 70 |
| Toluene<br>108883 | 80 | 70 |
| Toxaphene<br>8001352 | 80 | 70 |
| trans-1,2-Dichloroethylene<br>156605 | 80 | 70 |
| Trichloroethylene<br>79016 | 80 | 70 |
| Vinyl Chloride<br>75014 | 80 | 70 |
| Zinc<br>7440666 | 70 | 70 |

*** Summary:**

Table 9 identifies the human body weight used to calculate EPA's national recommended water quality criteria for 98 toxic pollutants to protect human health and the human body weight used to calculate ADEM's adopted water quality criteria for 95 toxic pollutants to protect human health. The former are based on individual water quality criteria documents for toxic pollutants hyperlinked in *National Recommended Water Quality Criteria - Human Health Criteria Table*, https://www.epa.gov/wqc/national-recommended-water-quality-criteria-human-health-criteria-table (accessed Dec. 31, 2021). The latter are based on ADEM Admin. Code r. 335-6-10-.07(1)(d) which provides that water quality criteria for toxic pollutants will be based on a human body weight of 70 kg.

**Comments:**

In November 1980, EPA recommended a national default human body weight of 70 kg based on the *Report of the Task Group on Reference Man, International Commission for Radiation Protection* (Nov. 23, 1957). *Notice of Water Quality Criteria Documents*, 45 Fed. Reg. 79318, 79324 (Nov. 28, 1980). This body weight was reaffirmed in 2000. *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health* (EPA-822-B-00-004, Oct. 2000), at 4-19.

In September, 2011, EPA updated the national default human body weight to 80 kg based on data derived from the National Health and Nutrition Examination Survey (NHANES) 1999-2006. *Exposure Factors Handbook: 2011 Edition* (EPA-600-R-09-052F, Sep 2011), at Table 8-1.

In *Water Quality Standards Handbook* (EPA 823-B-17-001 2017), Chap. 3, at § 3.3.2, EPA explained:

> The EPA's 2015 updated recommended exposure assumption for body weight is 80 kg, which represents the mean weight for adults 21 years of age and older based on data derived from the Center for Disease Control and Prevention's National Health and Nutrition Examination Survey (NHANES) 1999–2006 data. This recommendation is found in Table 8.1 in the 2011 Exposure Factors Handbook. This updated body weight assumption replaced the EPA's previously recommended weight for adults of 70 kg that was described in the 2000 Human Health Methodology, which was approximated from the mean body weight of adults from the NHANES III database (1988-1994) and a 1989 study by the National Cancer Institute (see the 2000 Human Health Methodology for additional information).

*See Human Health Ambient Water Quality Criteria: 2015 Update* (EPA 820-F-15-001 June 2015).

ADEM Admin. Code r. 335-6-10-.07(d) provides that water quality criteria for toxic pollutants will be based on a human body weight of 70 kg.



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