**Section 302.645 Determining the Acceptable Daily Intake**

The Acceptable Daily Intake (ADI) is the maximum amount of a substance that, if ingested daily for a lifetime, results in no adverse effects to humans. Subsections (a) through (e) list, in the order of preference, methods for determining the acceptable daily intake.

a) The lowest of the following ADI values:

1) For substances listed with a maximum contaminant level in 40 CFR 141 (incorporated by reference in 35 Ill. Adm. Code 301.106) or in 35 Ill. Adm. Code 611, the ADI equals the product of multiplying the maximum contaminant level given in milligrams per liter (mg/L) by 2 liters per day (L/d).

2) For substances listed with a maximum allowable concentration standard in 35 Ill. Adm. Code Subtitle F, the acceptable daily intake equals the product of multiplying the public health enforcement standard given in milligrams per liter (mg/L) by 2 liters per day (L/d).

b) For substances for which a no observed adverse effect level (NOAEL-H) for humans exposed to the substance in drinking water has been derived, the acceptable daily intake equals the product of multiplying one-tenth of the NOAEL-H given in milligrams of toxicant per liter of water consumed (mg/L) by 2 liters per day (L/d). The lowest NOAEL-H must be used in the calculation of the acceptable daily intake.

c) For substances for which the lowest observed adverse effect level (LOAEL-H) for humans exposed to the substance in drinking water has been derived, one-hundredth of the LOAEL-H may be substituted for the NOAEL-H in subsection (b).

d) For substances for which a no observed adverse effect level (NOAEL-A) has been derived from studies of mammalian test species exposed to the substance via oral routes including gavage, the acceptable daily intake equals the product of multiplying 1/100 of the NOAEL-A given in milligrams toxicant per day per kilogram of test species weight (mg/kg-d) by the average weight of an adult human of 70 kilograms (kg). The lowest NOAEL-A among animal species must be used in the calculation of the acceptable daily intake. Additional considerations in selecting the NOAEL-A include:

1) If the NOAEL-A is given in milligrams of toxicant per liter of water consumed (mg/L), before calculating the acceptable daily intake, the NOAEL-A must be multiplied by the daily average volume of water consumed by the mammalian test species in liters per day (L/d) and divided by the average weight of the mammalian test species in kilograms (kg).

2) If the NOAEL-A is given in milligrams of toxicant per kilogram of food consumed (mg/kg), before calculating the acceptable daily intake, the NOAEL-A must be multiplied by the average amount in kilograms of food consumed daily by the mammalian test species (kg/d) and divided by the average weight of the mammalian test species in kilograms (kg).

3) If the mammalian test species were not exposed to the toxicant each day of the test period, the NOAEL-A must be multiplied by the ratio of days of exposure to the total days of the test period.

4) If more than one NOAEL-A is available for the same mammalian test species, the geometric mean of the NOAEL-As must be used.

e) For substances for which a NOAEL-A is not available but the lowest observed adverse effect level (LOAEL-A) has been derived from studies of mammalian test species exposed to the substance via oral routes including gavage, one-tenth of the LOAEL-A may be substituted for the NOAEL-A in subsection (d). The LOAEL-A must be selected in the same manner as that specified for the NOAEL-A in subsection (d).

f) If no studies pertaining to the toxic substance in question can be found by the Agency, no criterion can be determined.

(Source: Amended at 47 Ill. Reg. 4437, effective March 23, 2023)