TLV of Mixtures

$$TLV = \frac{C1}{T1} + \frac{C2}{T2} + \frac{C3}{T3} + \frac{CN}{TN}$$

TLV: Threshold Limit Value
C: Concentration of chemical
T: TLV of chemical

When a worker is exposed to more than one chemical and each chemical effects the same target organ [ie. central nervous system] then the sum of their ratios must be less than one [1] or the combined TLV is exceeded.

It is a serious mistake to compare each chemical in such a mixture independently to their respective TLVs. To do so dramatically underestimates the actual risk to the exposed workers.

Example [ppm]:
- C1= 14, T1= 25; C2=1.8, T2= 5; C3= 1, T3= 10
  TLV= 14/25 + 1.8/5 + 3/10
  TLV= 1.22 ; TLV of mixture is exceeded.
- C1= 5, T1= 25; C2= 3, T2= 5; C3=1, T3= 10
  TLV= 5/25 + 3/5 + 1/10
  TLV= 0.9; TLV of mixture is not exceeded