

**Article Content**

**Title :** Standards of Permissible Exposure Limits at Job Site  CH

**Amended Date :** 2018-03-14

**Category :** Ministry of Labor ( 勞動部 )

**Attachment :** Attachment 1 Permissible Exposure Limitsof Hazardous Substances in Air.pdf  
Attachment 1 Permissible Exposure Limitsof Hazardous Substances in Air.doc  
Attachment 2 Permissible Exposure Limits of Dusts in Air.pdf  
Attachment 2 Permissible Exposure Limits of Dusts in Air.doc

**Article 1** These Regulations are promulgated according to Article 12, Paragraph 2 of the Occupational Safety and Health Act.

**Article 2** The Employer shall ensure that laborers' hazard exposure at job site is under the provisions in Attachment 1 or Attachment 2. If the hazardous substances whose permissible exposure limits are not given in Attachment 1 are detected, it shall be deemed as exceeding the standard.

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**Article 3** The permissible exposure limits are specified herein as follows:

- 1.The time weighted average for an 8-hour workday: the 8-hour time weighted average concentration for any substances without designation of "Ceiling" in Attachment 1, to which it is believed that workers may be repeatedly exposed for a daily usual work of 8 hours, without adverse effect.
- 2.The time weighted average for short term exposure: For any substance without designation of "Ceiling" in Attachment 1 and any substance listed in Attachment 2, the time weighted average for short term exposure shall be calculated by multiplying the "8-hour time weighted average" by an corresponding "Excursion Factor" listed in the following Attachment. This is the concentration to which it is believed that workers can be continuously exposed for any 15 minutes without suffering from irritation, chronic or irreversible tissue damage, or narcosis of sufficient degree to increase accidental injury or reduce work efficiency.

8-hour time weighted average	Excursion Factors	Remarks
Below 1	3	Units for
1~10, but 10 is not included	2	the 8-hour
10~100, but 100 is not included	1.5	time
100~1000, but 1000 is not included	1.25	weighted
Above 1000	1	average in
		the
		Attachment:
		Gaseous
		substances
		in ppm,
		particulate
		substances
		in mg/m <sup>3</sup> ,
		Asbestos in
		f/cc.

3. Ceiling Permissible Density: An employee's exposure to a substance designated by "Ceiling" in Attachment 1 shall not exceed, at any time during an ordinary 8-hour shift, the Ceiling Permissible Density given for the substance in the Attachment so as to prevent the employee from suffering unbearable irritation or physical impairment.

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Article 4 The time weighted average concentration referred to in the Standard shall be computed as follows:

$$TWA = \frac{C_1T_1 + C_2T_2 + \dots + C_nT_n}{T_1 + T_2 + \dots + T_n}$$

Where:

TWA is the time weighted average for the computed working period of (T<sub>1</sub> + T<sub>2</sub> + ... + T<sub>n</sub>).

C<sub>i</sub> is the concentration during any period of time T<sub>i</sub>.

T<sub>i</sub> is the duration in hours of the exposure at the concentration C<sub>i</sub>.

- Article 5 The ppm referred to herein is one part per million, equivalent to unit cubic centimeter of gaseous hazardous substances in every cubic meter of air at 25oC and 760 torr.
- Article 6 The mg/m<sup>3</sup> referred to herein is the number of "mg" in every cubic meter, equivalent to unit mg of particulate or gaseous hazardous substances in every cubic meter of air at 25oC and 760 torr.
- Article 7 The f/cc referred to herein is the number of fiber in every cubic cm, equivalent to unit number of fiber in every cubic centimeter of air at 25oC and 760 torr.
- Article 8 An employee's exposure to any hazardous substances in air of workplace shall be limited in accordance with the following requirements:
- 1.The time-weighted average of any 8-hour work shift for any substance, which is not designated by "Ceiling", shall not exceed the 8-hour time weighted average limit given for that substance.
  - 2.The time-weighted average of any continuous 15-minute exposure to any substance, which is not designated by "Ceiling", shall not exceed the short -term exposure limit given for that substance.
  - 3.Exposure to any substance, which is designated by "Ceiling", shall not exceed the acceptable ceiling concentration given for that substance.
- Article 9 In case of exposure to over 2 kinds of hazardous substances in air of a workplace, whose interaction on a health effect is neither synergistic nor independent, the interact effect shall be deemed as addition and the equivalent exposure shall be computed as follows:  

$$Em=(C1/L1)+(C2/L2)+------(Cn/Ln)$$
Where:  
Em is the equivalent exposure for the mixture of hazardous substances in air.  
Ci is the concentration of a particular substance i.  
Li is the exposure limit given for that particular substance i.  
Once the sum (Em) exceeds unity (1), the exposure shall be deemed as being exceeded.
- Article 10 The Standard shall not be used for the judgment of the following matters:
- 1.Relative index of toxicity between two different hazardous substances.
  - 2.Pollution indices for community air nuisances.
  - 3.Unique basis for the identification of occupational diseases.

Article 11 These Standards shall take effect on July 3, 2014.  
In addition to number 4, 43, 231 and 477 in Attachment 1 of Article 2 of these Standards amended taking effect on July 1, 2018, these amendments of Standards shall be put in force on the date of promulgation.

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Web site : Laws & Regulations Database of The Republic of China