

Confined Space Facts

Oxygen Deficiency

<6%

Coma in 40 seconds, spasmodic breathing, convulsions, and death.

6-10%

Nausea, vomiting, and unconsciousness; 8 minutes 100% fatal; 6 minutes, 50% fatal; 4-5 minutes, recovery with treatment.

12%

Unconsciousness without warning, poor judgment, blue lips.

14-16%

Accelerated breathing, increased heart rate, poor muscular coordination, fatigue, impaired perception and judgment.

17%

Hypoxia symptoms, accelerated breathing and heart rate appear

19.5%

Minimum permissible levels that work can be performed without respirators. Below this level, workers shall be required to wear supplied air respirators.

Confined Space Facts

Hydrogen Sulfide Exposure

1000 ppm

Immediate respiratory arrest, loss of consciousness, followed by death

300 ppm

Loss of consciousness (approx. 20 min.)

100 ppm

Lose sense of smell

15 ppm

15 min. STEL (Short Term Exposure Limit)

A **Short Term Exposure Limit (STEL)** is defined by **ACGIH (American Conference of Governmental Industrial Hygienists, Inc.)** as the concentration to which workers can be exposed continuously for a **short** period of time without suffering from:

1. Irritation
2. Chronic or irreversible tissue damage
3. Narcosis of sufficient degree to increase the likelihood of accidental injury, impair self-rescue or materially reduce work efficiency.

10 ppm

8 hr. TWA (Total Weight Average) According to OSHA the 8-hour TWA PEL (Permissible Exposure Limit) is defined in the Federal Register, Vol. 57, No. 114, June 12 1992, pps 26539, 26556, 26572, 26573 and 26590 as follows: – “TWA is the employee's average airborne exposure in any 8-hour work shift of a 40-hour work week which shall not be exceeded.”

1 ppm

Smell of rotten egg

Confined Space Facts

Carbon Monoxide Exposure

4000 ppm

Quickly fatal

2500 ppm

Loss of consciousness after approximately 30 minutes

600 ppm

Headache and discomfort after 1 hour

200 ppm

Ceiling, faint signs of discomfort may begin to appear

35 ppm

8 hr. TWA (Total Weight Average)

Confined Space Facts

Trench Rescue Facts:

Sheer wall collapse speed = 45 mph

1 cu/ft soil = 100 lbs.

24" soil on chest = 1,000 lbs.

Victim dies from inability to breath from weight on chest, not because face is covered.