

## What is Carbon Monoxide?

Carbon monoxide is a toxic gas that can occur in homes and buildings where combustion by-products are generated and allowed to disperse. It is colorless, odorless, tasteless and it is an asphyxiant. As a poison, it is deadly at high levels.

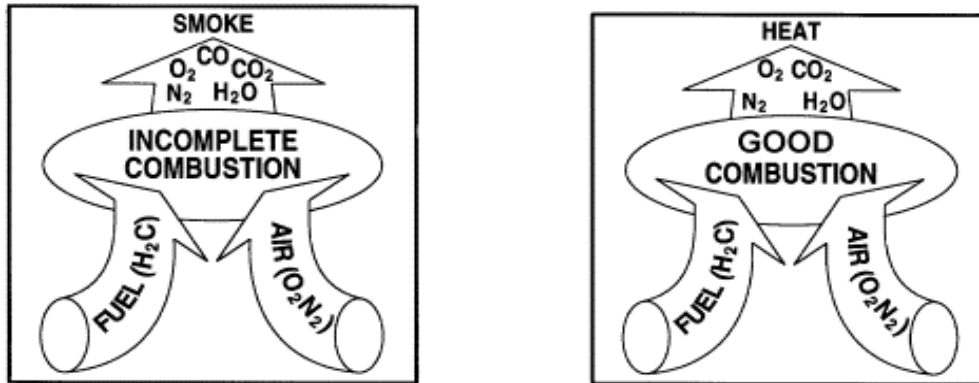
At low concentrations, CO can go undetected and contribute to nagging illnesses. It can compound pre-existing health problems and can go unblamed in premature deaths.

### How is carbon monoxide formed? How is it measured?

Carbon monoxide is a result of unburned fuel. Fossil fuels require specific ranges of oxygen and temperature to allow for complete combustion.

CO production is commonly associated with insufficient combustion air. However, excess introduction of combustion air (or insufficient fuel supply) can reduce flame temperatures to the point where CO is produced. When any portion of a flame is reduced below 1128°, CO will be produced. Flame impingement on heat exchanger surfaces, for example, can also result in lowering flame temperature and CO production.

If we completely burn all of the fuel and properly exhaust the by-products of combustion, we should not have any measurable CO.



Certain requirements must be met for combustion to occur. The quality of combustion is dependent upon and rated against the quality of the fuel and its potential to burn completely under ideal or perfect conditions.

Fuel that has the potential to burn, like carbon fuels (C), must be surrounded by air or oxygen (O<sub>2</sub>) but not flooded with oxygen. Ignition or flash point heat must be enacted and maintained. Fuel, air and heat must all be present or combustion will not occur. In controlled combustion systems, fuel is forced into a combustion zone with limited time constraints because more fuel is being forced into the zone.