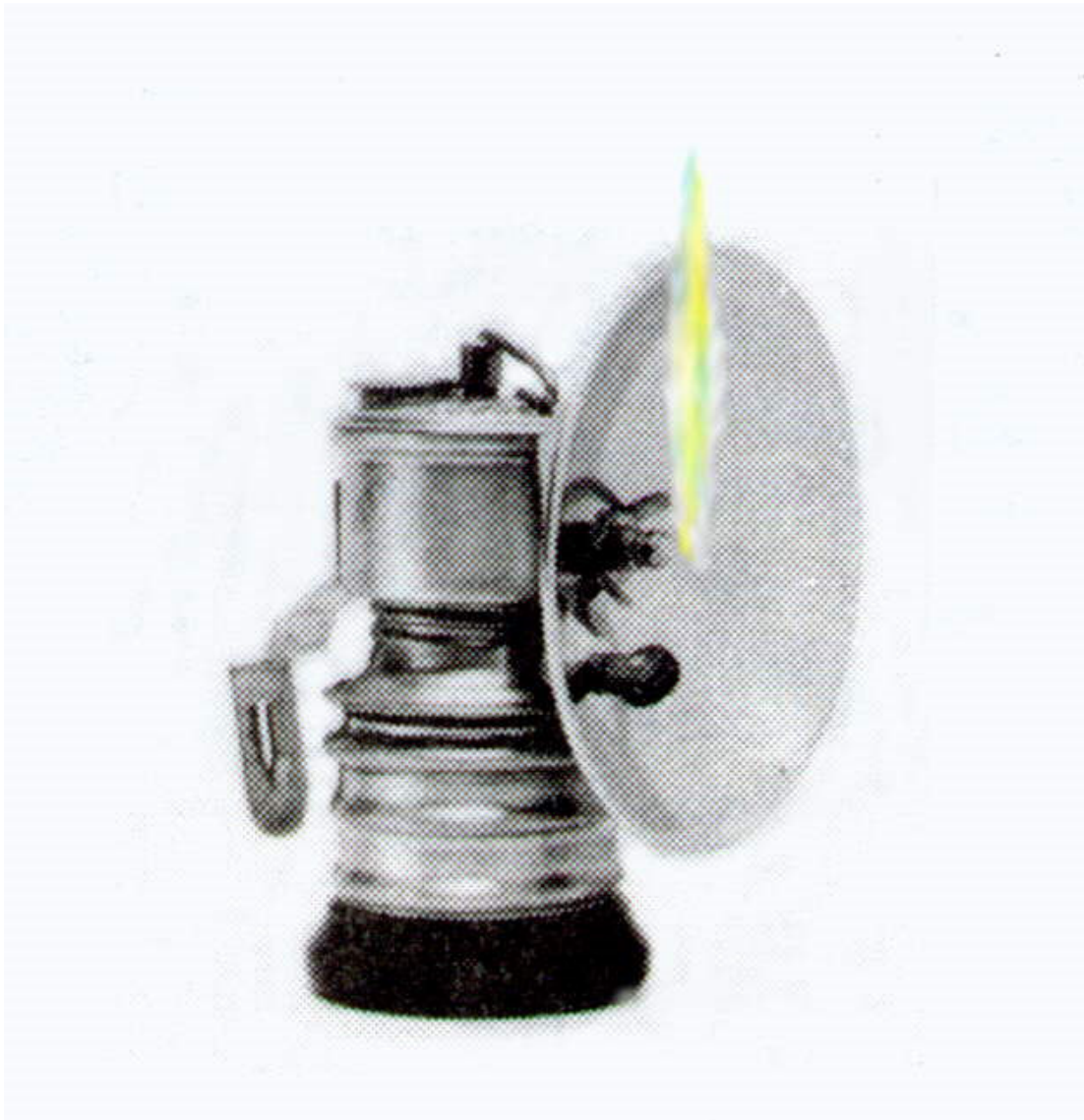


Acetylene Produced by Carbide



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The chemical family is Alkyne, its' chemical formula is C_2H_2 (a hydrocarbon). "It appears as a colorless gas with a distinctive garlic-like odor" (so says the MSDS). "The auto-ignition temperature is 565 degrees F with the explosive limits at 2.2% through 85% when mixed in air." "Acetylene gas is spontaneously combustible in air at pressures above 15 psi. It requires very low ignition energy so fires which have been extinguished without stopping the flow of gas can easily reignite with possible explosive force. Acetylene has a density very similar to that of air so when leaking it does not readily dissipate."

Exposure and Effects

Acetylene is a simple asphyxiant. Oxygen levels should be maintained a greater than 18 molar percent at normal atmospheric pressure which is equivalent to a partial pressure of 135 mm Hg. High concentrations of Acetylene so as to exclude an adequate supply of oxygen to the lungs causes dizziness, deeper breathing due to hunger for air, possible nausea and eventual unconsciousness. Acetylene is relatively inactive biologically and essentially nontoxic; therefore, the major hazard is the exclusion of an adequate supply of oxygen to the lungs. Low concentrations (10 - 20% in air) will cause symptoms similar to that of being intoxicated. As a narcotic gas or intoxicant, it can cause hypercapnia (an excessive amount of carbon dioxide in the blood). Repeated exposures to tolerable levels has not shown deleterious effects." Exposure to the acetone component is unlikely unless cylinder is leaking on its' side. Acetone is primarily a central nervous system toxin causing headache, nausea, dizziness, vomiting, and fatigue. (I think this only applies to cylinders of acetylene for welding).

First Aid

Get a victim to fresh air as soon as possible! Skin exposure is not a problem and it is not a carcinogen (cancer causing agent).

Please Note: Lynn and I have had effects from being exposed to carbide covers that are likely compounded by sinus and allergy problems. They include headache during and after trips, and swelling of the nasal passages also during and after trips. This happens when there are several large generator type gas grill carbide users in the group or when confined in small crawlways without adequate airflow.

Source: This scientific data on acetylene produced by carbide is from a material safety data sheet (MSDS) from Airco (a company that supplies various gases to industry).

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