R134 Inhalation Hazards

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R-134 is a commercial refrigerant also known as tetrafluoroethane, which is most commonly found in refrigerators and automobile air conditioners. According to the Environmental Protection Agency, the chemical has low acute toxicity levels and presents a low risk to humans exposed to it in small amounts. The majority of hazards associated with this inert gas arise through inhalation over time or in large amounts.

Asphyxiation Symptoms
According to the National Refrigerants website, inhalation of R-134 reduces oxygen by 12 percent to 14 percent and can cause symptoms of asphyxiation. These symptoms include blurred vision, choking, shortness of breath, a bluish tint to the skin, rapid pulse, high blood pressure, convulsions and loss of consciousness into coma or death. Symptoms worsen as exposure to the chemical increases. These effects develop overtime as R-134 has a low occurrence of acute reactions.

Loss of Coordination and Irritation of Airway
A loss of coordination can occur with inhalation of R-134 because of lack of oxygen reaching the brain. The inhalation of the chemical also can cause irritation and frostbite in airways, nasal passages and surrounding skin areas. If the solution is in a mist form, it can settle in the lungs or gastrointestinal tract and cause gas buildup. This may not be immediately life threatening, though it causes a good deal of discomfort.

Heart Problems
Excessive inhalation of R-134 has been shown to cause cardiac arrhythmia according to the National Refrigerants website. This condition can be life threatening as sudden bio-electrical problems with the heart can cause arrest.
and sudden death. Arrhythmia also can cause a stroke or embolism. Those experiencing heart arrhythmia may experience chest pain on par with a heart attack.

**Tumor Growth**

According to the Environmental Protection Agency, benign tumor growth has been shown in land animals exposed to large amounts of R-134. While the EPA stresses that the tumor growth was not cancerous, it is still a potential hazard for workers that come into frequent contact with the refrigerant as even benign tumors can press against vital organs and cause health problems.

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**References**

National Refrigerants: R-134A Safety Data Sheet
EPA: Refrigerant Safety

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