

Acetone

Acetone (CAS 67-64-1), also known as propanone, is the simplest ketone. Acetone has excellent solvent properties as a pure solvent, but is also soluble with water, which greatly increases the utility of acetone solutions in a wide variety of consumer products. The NIOSH and OSHA exposure limits are TWA 250 ppm (590 mg/m³) and TWA 1000 ppm (2400 mg/m³) (www.cdc.gov/niosh/npg/npgd0004.html), respectively. The acronym TWA refers to “time-weighted average”, meaning that an individual can be exposed to a cumulative amount of the chemical over a time period, which for NIOSH and OSHA, is eight hours. The high exposure limits and high volatility make acetone an excellent candidate for paint manufacturers as the primary solvent for spray paints. The acetone volatilizes rapidly, thereby yielding a faster finished product. The majority of the consumer products listed in the NIH Household Products database (<http://householdproducts.nlm.nih.gov/>) are spray paints. In some products, the acetone content ranges from a few percent to nearly 50% of the ingredients present. Many consumer projects using spray paint are performed in the basement or attached garage, but the highly volatile acetone easily diffuses throughout the indoor air environment.

Acetone also is present in rapidly “drying” glues and adhesives and in personal care products, such as fast “drying” nail polishes and nail polish removers. Acetone is also a natural metabolism product from plants, animals, and humans. In humans, higher levels of acetone are respired in people who are fasting, exercise strenuously, or who have uncontrolled diabetes. (Toxicological information on acetone. Integrated Risk Information System (IRIS). U.S. EPA, Office of Health and Environmental Assessment. Last significant revision: July, 2003).

About Prism Analytical Technologies, Inc.

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