



## Cumene

### Key Points



#### Cumene

- *Reasonably anticipated to be a human carcinogen*
- A colorless liquid used to make other chemicals, such as acetone and phenol
- Found in fuel products and tobacco smoke, making it an environmental pollutant

#### Report on Carcinogens Status

*Reasonably anticipated to be a human carcinogen*

#### What is cumene?

Cumene is a flammable and volatile chemical with a gasoline-like odor. It is a natural component of coal tar and petroleum, and is found in tobacco smoke.

#### How is cumene used?

Cumene is used primarily to manufacture acetone and phenol. Acetone is a solvent commonly used in industry to dissolve other substances, such as paints or varnishes. Acetone is used in some consumer products, and both acetone and phenol are widely used to make plastics.

#### How are people exposed to cumene?

People are mainly exposed to cumene through the environment and in workplaces that use or produce cumene. Because cumene is a natural component of petroleum, it is found in emissions from petroleum products, such as combustion of some fuels by vehicles, evaporation, loss of fuel from gasoline stations, and oil spills. People who work with cumene in petroleum-related industries may have higher exposure. Also, people can be exposed through tobacco smoke.

#### What evidence is there that cumene causes cancer?

##### *Human Studies*

No human studies were identified that evaluated the relationship between human cancer and exposure specifically to cumene.

##### *Animal Studies*

Inhalation exposure to cumene caused lung tumors in male and female mice, and liver tumors in female mice.

##### *Mechanistic Studies*

The exact mechanism of how cumene causes cancer is not fully known. Exposure to cumene in animals caused DNA damage in some tissues.

#### What are some things I can do to reduce exposure to cumene?

Minimize exposure to emissions from vehicles and machinery that run on petroleum-based fuel. Workers and employers should practice good occupational health behaviors, which may include wearing protective clothing, respirators, and gloves. Work places should be well-ventilated, and the time workers are exposed to cumene should be reduced. Quit smoking and avoid secondhand smoke.

#### Where do I go for more information?

National Toxicology Program  
<http://ntp.niehs.nih.gov/go/37895>

U.S. Environmental Protection Agency  
<http://www.epa.gov/iris/subst/0306.htm>

National Institute for Occupational Safety and Health  
<http://www.cdc.gov/niosh/npg/npgd0159.html>

Occupational Safety and Health Administration  
<https://www.osha.gov/chemicaldata/chemResult.html?recNo=775>



The Report on Carcinogens, Thirteenth Edition, is prepared by the National Toxicology Program, an interagency group coordinated by the U.S. Department of Health and Human Services. The report identifies agents, substances, mixtures, or exposures in two categories: *known to be a human carcinogen* and *reasonably anticipated to be a human carcinogen*. **The full Report on Carcinogens is available at <http://ntp.niehs.nih.gov/go/roc13>.**