

Summary of Methane Health Effects

Methane is a colorless and odorless gas. Methane is flammable in high concentrations, between 5% and 15% (equivalent to 50,000 to 150,000 ppm)¹. Measurements conducted by SCAQMD staff and other agencies in the Porter Ranch community show that methane levels are far below the concentrations where flammability would be a concern. Methane is considered to be biologically inert, but can cause health effects when levels are high enough to displace oxygen in the air, which can pose a suffocation hazard^{2,3}. However, this is generally only a concern in confined spaces (such as the inside of a tank), rather than in outdoor environments or typical indoor environments, where oxygen is readily available^{2,3}.

Methane is not considered an air toxic, as it is not on the California Toxic Air Contaminants list⁴, nor the California Proposition 65 list⁵, nor is it on the U.S. EPA Hazardous Air Pollutants list⁶. However, methane is considered a climate pollutant (i.e. greenhouse gas), and is primarily regulated through state and federal regulations.

While methane was the main air pollutant released as a result of the leak at well SS-25, other air pollutants, including some air toxics, were detected in the community near the Aliso Canyon facility. Some preliminary estimates of the potential health impacts of the known air toxics that were measured is available on this webpage: <http://www.aqmd.gov/home/regulations/compliance/aliso-canyon-update/health-impacts-estimates>. Additional evaluation of health impacts of air pollutants (including mercaptans) in the community near the Aliso Canyon facility will be a focus of the health study that is required through the Order for Abatement.

¹ Cashdollar KL, Zlochower IA, Green GM, Thomas RA, Hertzberg M (2000). "Flammability of methane, propane, and hydrogen gases". *Journal of Loss Prevention in the Process Industries*. 2000 May; 13(3-5): 327-340.

² National Institute for Occupational Safety and Health (2014). "Methane". Updated 7-1-2014. Atlanta, GA: Centers for Disease Control and Prevention. <http://www.cdc.gov/niosh/ipcsneng/neng0291.html>. Access date: 8-24-2016.

³ Committee on Toxicology. "Emergency and Continuous Exposure Limits for Selected Airborne Contaminants, Volume 1". Washington, DC: National Academies Press, 1984. <http://www.nap.edu/read/689/chapter/10>.

⁴ California Air Resources Board. "Toxic Air Contaminant Identification List". <http://www.arb.ca.gov/toxics/id/taclist.htm>. Access date: 8-24-2016.

⁵ Office of Environmental Health Hazard Assessment (2016). "The Proposition 65 List". <http://oehha.ca.gov/proposition-65/proposition-65-list>. Access date: 8-24-2016.

⁶ U.S. Environmental Protection Agency. "Initial List of Hazardous Air Pollutants with Modifications". <https://www.epa.gov/haps/initial-list-hazardous-air-pollutants-modifications>. Access date: 8-24-2016.