

# FORMALDEHYDE OCCURS NATURALLY AND IS ALL AROUND US



Formaldehyde is created by every living system – from plants to animals to humans. It is broken down quickly and does not accumulate in the body.

## Humans Produce Formaldehyde

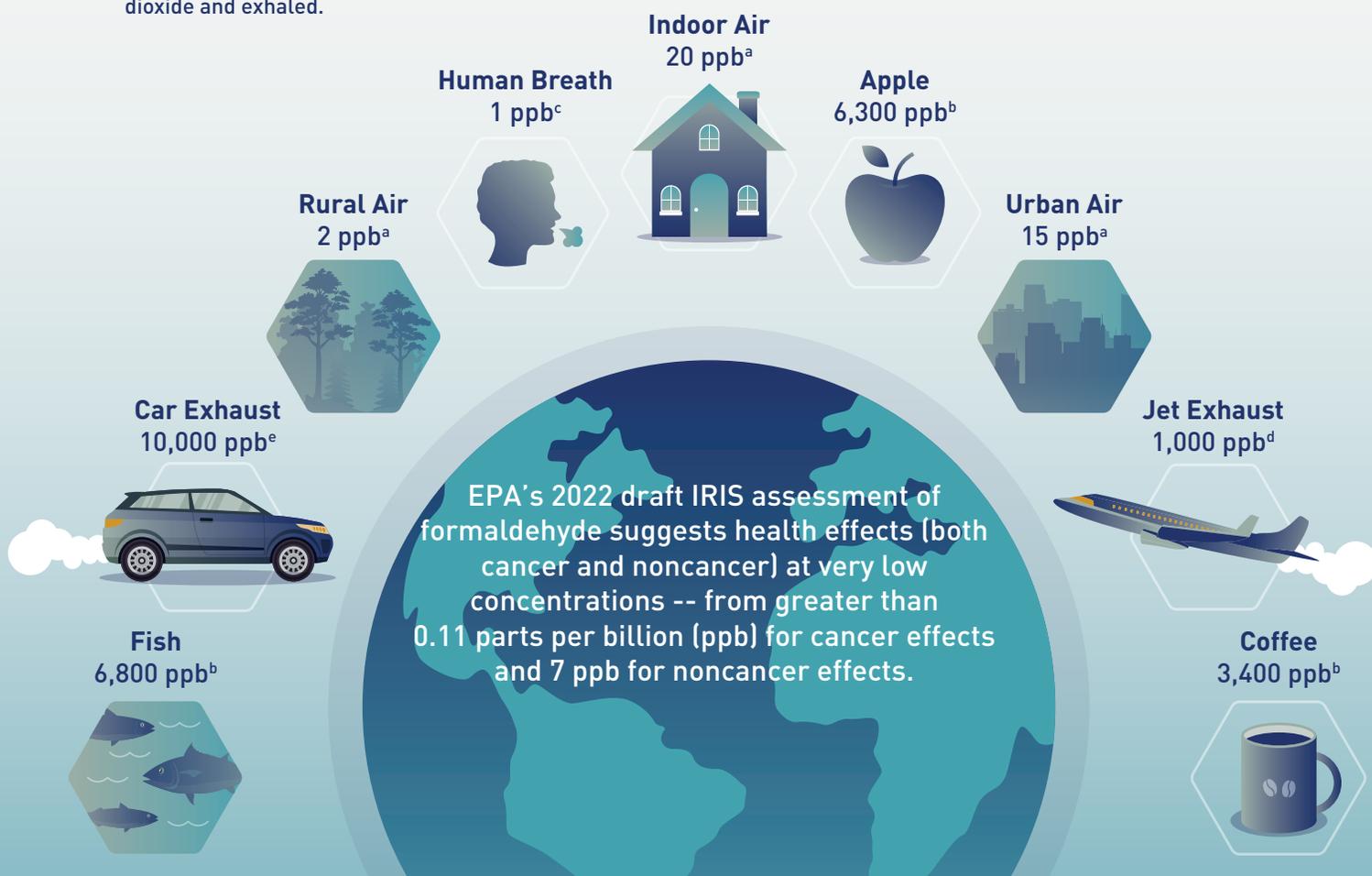


Formaldehyde is a naturally occurring substance made of carbon, hydrogen and oxygen. Humans produce about 1.5 ounces of formaldehyde a day as a normal part of our metabolism and inhale approximately 0.0007 ounces at concentrations equivalent to the World Health Organization (WHO) Indoor Air Quality Guideline. Inhaled formaldehyde also metabolizes rapidly and is converted to carbon dioxide and exhaled.

## A Natural By-Product



Formaldehyde also occurs as a by-product from all combustion processes, such as forest fires, automotive exhaust and cooking. Low levels of formaldehyde also occur naturally in a variety of fruits and vegetables, including apples, carrots and bananas. It does not accumulate in the environment or within plants and animals.



## One of the Most Studied Chemicals In Use Today

Formaldehyde levels in typical indoor environments are well below concentrations that could trigger sensory irritation in most people. The WHO has set protective indoor air guidelines for formaldehyde at 80 ppb. Typical household formaldehyde concentration levels are between 16 and 32 ppb.

As one of the most-studied chemicals in use today, formaldehyde has been researched extensively. This research is the scientific foundation for current health protective standards. These standards indicate the low levels of formaldehyde to which most people are exposed do not cause adverse health effects.

Learn more at [formaldehyde.americanchemistry.com](https://formaldehyde.americanchemistry.com).

- a. Division of Toxicology and Environmental Medicine. (2008, September). Public Health Statement Formaldehyde CAS # 50-00-0. Atlanta, GA. Agency for Toxic Substances and Disease Registry. Retrieved from <https://www.atsdr.cdc.gov/ToxProfiles/tp111-c1-b.pdf>.
- b. Centre for Food Safety. (2017, May 2). Foods Known to Contain Naturally Occurring Formaldehyde. Hong Kong. The Government of the Hong Kong Special Administrative Region. Retrieved from [https://www.cfs.gov.hk/english/programme/programme\\_rafs/programme\\_rafs\\_fa\\_02\\_09.html](https://www.cfs.gov.hk/english/programme/programme_rafs/programme_rafs_fa_02_09.html);  
European Food Safety Authority. (2014). Endogenous formaldehyde turnover in humans compared with exogenous contribution from food sources. Parma, Italy. EFSA Journal, 12(2), 3550. Retrieved from <https://efsa.onlinelibrary.wiley.com/doi/pdf/10.2903/j.efsa.2014.3550>.
- c. Nielsen, G. D., Larsen, S. T., & Wolkoff, P. (2017). Re-evaluation of the WHO (2010) formaldehyde indoor air quality guideline for cancer risk assessment. Archives of toxicology, 91(1), 35-61. Retrieved from <https://link.springer.com/article/10.1007/s00204-016-1733-8>;  
Salthammer et al. (2010). American Chemical Society. Graphic adapted from NRC, 2011. Review of the EPA Draft Iris Assessment of Formaldehyde, 13. Washington, DC. Retrieved from <https://www.ncbi.nlm.nih.gov/books/NBK208227>;  
World Health Organization. (2010). WHO guidelines for indoor air quality: selected pollutants. Retrieved from <https://www.ncbi.nlm.nih.gov/books/NBK138711>.
- d. Agency for Toxic Substances and Disease Registry. (1999, July). Toxicological Profile for Formaldehyde. Washington, DC. U.S. Department of Health and Human Services, p. 290. Retrieved from <https://www.atsdr.cdc.gov/ToxProfiles/tp111.pdf>.
- e. Thermo Scientific. (2007). The Measurement of Methanol and Formaldehyde in Automobile Exhaust Using Fourier Transform Infrared (FT-IR) Spectroscopy. Madison, WI. Thermo Electron Scientific Instruments LLC. Retrieved from <http://www.bkinstruments.co.kr/su2/AN50652-E-Measurement-Methanol-Formaldehyde-Auto-Exhaust.pdf>.