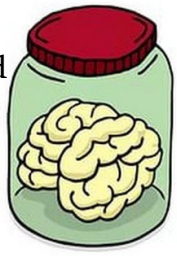
COLUMBIA UNIVERSITY
IN THE CITY OF NEW YORK

Formaldehyde

FAQ Sheet

Formaldehyde is a colorless gas with a strong, pungent odor. In its liquid form (often mixed with various solvents), it is widely used in research as a preservative and fixative. It is a sensitizer and a known human carcinogen. Even at low concentrations, acute exposure may irritate the eyes, nose, throat, and respiratory system, and can cause headaches. OSHA's Formaldehyde Standard (29 CFR 1910.1048) regulates exposures to formaldehyde gas, formalin, and paraformaldehyde.



Exposure

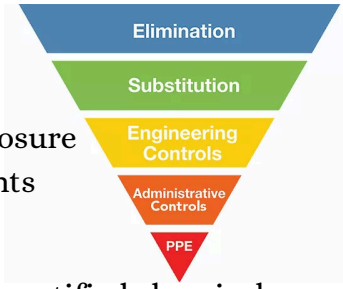
Formaldehyde exposure can occur when researchers are exposed through inhalation of vapors or direct skin contact with the liquid. There are two main types of exposure:

- Acute exposure refers to short-term, high-level exposure that occurs suddenly or over a brief period.
- Chronic exposure involves repeated or continuous low-level exposure over an extended period.

Acute exposure to Formaldehyde can lead to symptoms such as nausea, vomiting, respiratory tract irritation, chest tightness, headaches, allergic skin reactions, eye irritation, dryness, and cracking and scaling of the skin upon dermal contact.

Chronic exposure is more serious and may result in respiratory sensitization, leading to asthmatic symptoms and cancer.

Safe Work Practices



Substitution - When working with formaldehyde, researchers should minimize exposure risks by purchasing premade solutions, and always using the lowest possible amounts and concentrations required for the experiment.

Engineering Controls- Researchers should conduct all work with formaldehyde in a certified chemical fume hood when using quantities greater than 0.1 mL.

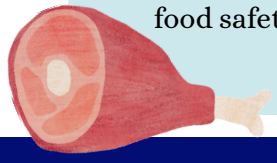
Administrative Controls- For safe formaldehyde handling, ensure a spill or clean-up kit is readily available in the laboratory, and complete the Safe Use of Formaldehyde Training (TC3750) prior to use; additionally, submit Appendix E2 as part of the IACUC protocol for animal work, or as a standalone document for non-animal use.

PPE- Always protect your hands with non-latex gloves (like nitrile) when handling formaldehyde; for solutions greater than 1%, further safeguard your eyes and skin from splashes with safety goggles or a face shield.

Contact Occusafety at with questions or to arrange exposure monitoring.

Fun FAQ!

In the early 1900s, formaldehyde was used illegally as a food preservative — especially in milk and meat — before food safety laws caught up.



Have more questions? Reach out to EH&S at Occusafety@columbia.edu or give us a call

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QR Code: Columbia EH&S Formaldehyde Exposure Control Plan.