



Information on Formaldehyde

Sal CURB[®] liquid antimicrobial

Maintaining the health and safety of livestock and poultry is an important aspect of animal welfare and food safety. To prevent the introduction of disease and human pathogens into the food chain, producers must take a comprehensive approach to biosecurity. Assuring the food these animals consume is free of pathogen contamination, such as *Salmonella* is a must. Sal CURB is a liquid product containing formaldehyde, which maintains feed and feed ingredients *Salmonella*-negative for up to 21 days.

What is formaldehyde

Formaldehyde is a natural chemical necessary for life. It is a colorless, strong-smelling gas and is referred to as formalin when used in water-based solutions. Formaldehyde is used in products including particle board, household products, glues, permanent press fabrics, paper product coatings, fiberboard and plywood. It is also widely used as an industrial fungicide, germicide and disinfectant.¹ Safety concerns with handling formaldehyde have been documented during high exposures over long periods of time to airborne formaldehyde gas. For that reason, safe use and safe handling is key to maximizing the beneficial attributes of formaldehyde.

Formaldehyde is a natural product

Formaldehyde is a chemical found naturally in the environment. It is also an intermediate in many reactions and is found in most living beings. Foods such as fruits, vegetables, milk, meat and fish all contain small amounts of formaldehyde. Formaldehyde is also a product of the incomplete combustion of carbon, meaning it is found in vehicle exhaust, forest fires and cigarette smoke.²



Figure 1: Concentration of natural formaldehyde found in common foods (green) and environmental sources (black).^{3,4,5,6}

Formaldehyde is found within our bodies

Formaldehyde is produced naturally in the human body as a part of normal functions to produce energy and build the basic materials needed for important life processes. This includes making amino acids, which are the building blocks of proteins which the body needs.⁷ Levels of formaldehyde found in the blood range from 2 – 3 ppm.⁸ When formaldehyde enters the body orally, in food or water,

it joins the pool of natural formaldehyde in the body. Formaldehyde is either oxidized into formic acid by natural enzymes and leaves the body through the urine, is further broken down into carbon dioxide and leaves the body through breathing, or is incorporated into other cellular molecules.⁹ Therefore neither formaldehyde nor formic acid are stored to any significant extent in any tissue of the body.⁹ This process of breaking down formaldehyde in the body occurs readily with a half-life in the human body of 1.5 minutes.¹⁰

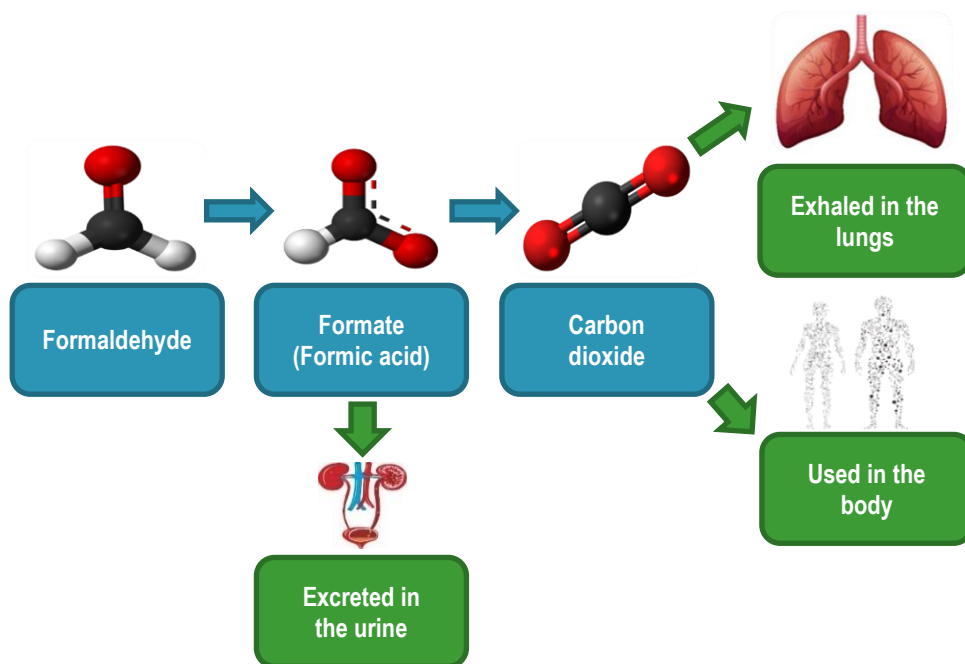


Figure 2. Natural breakdown process of formaldehyde in the human body by formaldehyde dehydrogenase.

Safe Handling

While formaldehyde has specific hazards, it is found around us in small concentrations every day. It is important that individuals working with formaldehyde understand how to handle it safely and minimize exposure. Kemin works very closely with customers to assure the proper steps are taken to ensure the safe handling of Sal CURB®. This work starts prior to Sal CURB ever coming on site and continues long after the application system has been installed and is in operation.

References

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