

Government Regulatory Agencies Ozone Approvals

Food and Drug Administration (FDA)

Regulates / Allows Ozone contact with Food products: F&V, Seafood, Shell Eggs, Fish and Bottled Water

FDA recognized ozone as GRAS in 1982 for disinfection of bottled water and later recognized it again as a sanitizing agent for bottled water treatment lines under a similar GRAS petition.

REF: U.S. FDA. GRAS status of ozone. Federal Register 47(215):50209-50210. 1982. (<https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?fr=184.1563>)

The FDA recognized as GRAS but after technical drawbacks with initial GRAS recognition, it was unclear to many who could use ozone and on what. EPRI, a team comprised of export food scientists, concluded in June 1997, "The available information supports the safety of ozone when used as a food disinfectant or sanitizer, and further that the available information supports a GRAS classification of ozone as a disinfectant or sanitizer for foods when used at levels and by methods of application consistent with good manufacturing practices".

REF: EPRI. Technical Report-i 08026, Vols. 1, 2, 3: (<https://www.epri.com/#/pages/product/1005962/?lang=en-US>)

FDA recognizing issues in initial GRAS and after working with EPRI, the FDA, on June 26, 2001, formally approved the use of ozone as an Antimicrobial Agent for the Treatment, Storage and Processing of Foods in Gas and Aqueous Phases.

REF: U.S. FDA. Secondary direct food additives permitted in food for human consumption. Federal Register 66(123):33829-33830. 2001. (<https://www.federalregister.gov/documents/2001/06/26/01-15963/secondary-direct-food-additives-permitted-in-food-for-human-consumption>)

United States Department of Agriculture (USDA/FSIS)

Regulates / Allows Ozone contact with Meats, Poultry and Egg Products

On December 21, 2001, the USDA/FSIS approved the use of ozone in contact with poultry and meats up to packaging. Ozone sterilization of meats as well as equipment.

REF: USDA FSIS. Letter from Robert C. Post (FSIS, Washington, DC) to Mark D. Dopp (American Meat Institute, Arlington, VA). Dec. 21, 2001.

REF: FSIS Safe and Suitage Ingredients used in the Production of Meat, Poultry, and Egg Products (<https://www.fsis.usda.gov/wps/wcm/connect/bab10e09-aefa-483b-8be8-809a1f051d4c/7120.1.pdf?MOD=AJPERES>)

USDA National Organic Program (NOP)

Allows Ozone for Organic Food contact

USDA NOP added ozone to the substances allowed as ingredients in or on processed products labeled as "organic" or "made with organic...".

REF: National Organic Program: USDA Organic Regulations (<https://www.federalregister.gov/documents/2017/03/21/2017-05480/national-organic-program-usda-organic-regulations>)

Environmental Protection Agency (EPA)

Regulates Ozone generators under FIFRA for Surface Sanitation and Potable Water

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), passed in 1947 with the intent to organize established procedures and methods to register pesticides with the USDA. The FIFRA act dictates that the Environmental Protection Agency (EPA) the use and sale of pesticides. Ozone is labeled as a pesticide under the EPA.

ZER₀₃® Aqueous Ozone is registered under the EPA: 090798-WI-01

Occupational Safety and Health Administration (OSHA)

Regulates Ozone gas in workplace air

Occupational Safety and Health Administration (OSHA) controls exposure limits of gaseous ozone to employees in a workplace. OSHA regulates that gaseous ozone levels in ambient air not exceed 0.1 parts per million (PPM) for an 8-hour exposure time.

REF: OSHA Standard Numbers 1910.1000, 29CFR for Air Contaminants (<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1000>)

REF: OSHA Standard Numbers 1910.1200, 29CFR for Hazard Communication (<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1200>)

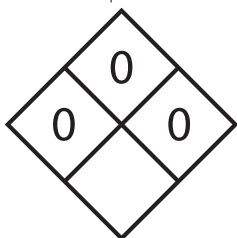
REF: OSHA Letter - Regulation for ozone 1994-09-29 (<https://www.osha.gov/laws-regs/standardinterpretations/1994-09-29-0>)

Aqueous Ozone is Safe to Handle

Do I Need to wear PPE When Handling?

It is not required to wear PPE when working with ZER₀₃® Aqueous Ozone, however using the correct PPE when cleaning for the correct application is always recommended.

ZER₀₃® Aqueous Ozone as a triple zero on the NFPA Hazard Rating Diamond.



- NFPA Health Hazard:** 0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials
- NFPA Fire Hazard:** 0 - Materials that will not burn.
- NFPA Reactivity:** 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.