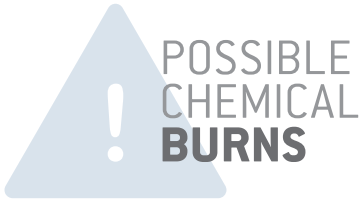




#ScienceHearted

# Your employees' health isn't worth the risk.



**SERIOUS**  
RESPIRATORY AND  
MUCOUS MEMBRANE  
IRRITATION

**ACUTE  
LUNG  
DAMAGE**

## WORKER SAFETY IS MORE IMPORTANT THAN EVER.

Antimicrobials are great at keeping food safe. But not all of them are safe for your most valuable assets.

Though Peracetic Acid (PAA) is approved for use on meat and poultry, no regulatory body has reviewed its effects on worker safety.<sup>1</sup>

After spending 5 years in a processing plant using PAA in New York, a 37-year-old poultry inspector's lungs bled out. He died.<sup>2</sup>

In Utah, two USDA inspectors working in a turkey processing plant that used PAA filed several reports after they noticed respiratory problems, coughing fits and bloody noses.<sup>3</sup>

## AS OF 2020, ALL PROCESSING PLANTS NEED TO REREGISTER PAA CHEMICAL USAGE WITH THE FDA.

You're faced with what seems like an impossible challenge: keeping food safe for consumers while keeping worker safety a priority.



### PROTECT EMPLOYEES.

What if you had an effective antimicrobial that is well below Personal Exposure Limits (PEL)?



### REDUCE BACTERIA.

What if you could reduce overall bacteria and control growth?



### MAINTAIN EQUIPMENT.

What if you could use an antimicrobial with no detrimental impact on floors, valves or cooling units?

**DBDMH** [1,3-Dibromo-5,5-Dimethylhydantoin], the active ingredient in AviBrom™, BoviBrom™ and PorciBrom™, effectively kills and controls bacteria without detrimental effects on workers' health or safety.<sup>4</sup>

DBDMH requires no chemical mixing or activation and thanks to its near neutral pH and non-offensive odor, doesn't require ventilation at the point of application. It is well within OSHA Personal Exposure Limits (PEL) and is non-corrosive to concrete, stainless steel and PVC.

**Table 1:** Industrial Hygiene Exposure Monitoring Results<sup>4</sup>

Sample Location*	Sampling Media**	HOB <sub>r</sub>	Bromide-containing Aerosols	Bromoform	Other Halogenated Hydrocarbons***
Carcass Wash Entrance	Ag Membrane Filter (NIOSH 6011)	ND (<1 ppb)	ND (<1 ppb)	NA	NA
Field Blank	Ag Membrane Filter (NIOSH 6011)	ND	ND	NA	NA
Carcass Wash Exit	Charcoal Tube (NIOSH 1003)	NA	NA	ND (<6 ppb)	ND (<30 ppb)
Field Blank	Charcoal Tube (NIOSH 1003)	NA	NA	ND	ND

ND=none detected; the minimum detectable air concentration was:  
HOB<sub>r</sub> – 1 ppb; bromide – 1.0 ppb; bromoform – 6 ppb; other brominated hydrocarbons – 30 ppb.

NA=Not applicable to sample collected.

Established exposure limits are:

Bromoform – both OSHA and ACGIH list 0.5 ppm (500 ppb) as the 8-hour time-weighted average exposure limit.

HOB<sub>r</sub> – the OSHA and ACGIH 8-hour time-weighted average exposure limit is 0.1ppm (100 ppb).

Bromide – There are no established exposure limits for bromide ion.

\*All samples were area samples collected using pre-calibrated pumps.

\*\*HOB<sub>r</sub> vapor was collected on silver (Ag) membrane filters (SKC 225-9006). Bromide ion-containing aerosols were collected on PTFE pre-filters included in the Ag membrane cassette. Bromoform and other brominated hydrocarbons were collected on charcoal tubes (SKC 226-09). All samples analyzed at ENTEK Environmental Laboratories, 14285 Airline Highway, Baton Rouge, LA 70817. ENTEK is an AIHA-accredited Laboratory.

\*\*\*Other brominated hydrocarbons calculated as bromoform.

As broad-spectrum, post-harvest antimicrobials, BoviBrom, AviBrom and PorciBrom have been proven effective in reducing levels of *Salmonella* and *E. coli* O157:H7, O26, O45, O103, O111, O121 and O145.<sup>5</sup>



To learn more contact your ARM & HAMMER™ representative or visit AHfoodchain.com.

1 [https://www.washingtonpost.com/politics/at-chicken-plants-chemicals-blamed-for-health-ailments-are-poised-to-proliferate/2013/04/25/d2a65ec8-97b1-11e2-97cd-3d8c1afe4f0f\\_story.html?noredirect=on&utm\\_term=.faaf638965f6](https://www.washingtonpost.com/politics/at-chicken-plants-chemicals-blamed-for-health-ailments-are-poised-to-proliferate/2013/04/25/d2a65ec8-97b1-11e2-97cd-3d8c1afe4f0f_story.html?noredirect=on&utm_term=.faaf638965f6)

2 <https://www.nelp.org/publication/take-action-reduce-worker-health-risks-anti-microbial-chemical-meat-plants/>

3 <https://theintercept.com/2018/07/19/moroni-utah-turkey-farm-workers-norbest/>

4 Data on file. Industrial Hygiene Report Feb. 14, 2011.

5 Yang X, Pittman CI, Penham CC, Woerner DR, Geomaras I, Belk KE. Efficacy of BoviBrom Using Surrogates in a Bone Wash Cabinet - Data Summary. Data on file.