

Peracetic Acid Ice Technology:

Safety and Freshness Where it Matters Most

Peracetic acid (PAA) is the only FDA approved antimicrobial for use in ice that contacts seafood (Food Contact Notification/FCN 699). PAA (25-190ppm) is introduced to water, which is then flash frozen. The resulting antimicrobial ice may be shaved, crushed, or in any other form needed.

The Technology

Melting of the PAA-containing ice offers time-release of antimicrobial PAA onto the seafood, offering extended protection from spoilage and pathogenic microorganisms.



Features and Benefits:

- High level efficacy against pathogenic microorganisms such as: *E. coli*, *Pseudomonas*, *Salmonella choleraesius*, *Listeria monocytogenes*, as well as against spoilage yeast and mold.
- Enhances freshness, quality, and safety of seafood throughout its useful shelf life.
- Imparts no taste or odor to the seafood.
- Will not corrode ice machine surfaces.
- No toxic or harmful by-products associated with its use.
- Certified and approved by the National Organic Standards Board (USDA) for use in organic food processing.



Study on Lower Concentration PAA (50ppm) for an Extended Contact Time (3 hours)

| | Aerobic Plate Count (CFU/swab) | Yeast (CFU/swab) | Mold (CFU/swab) |
|--|--------------------------------|------------------|-----------------|
| Surface of fish as received | 2,600 | 16,000 | 10 |
| Surface of fish treated with 50 ppm PAA solution | <1 | 420 | <1 |
| Log ₁₀ Reduction PAA Solution vs. as Received | <u>>3.4</u> | <u>1.6</u> | >1 |

The table above illustrates that ice/water containing a biocidal dose of PAA can prevent cross contamination between fish in areas such as storage and transport bins.

Study on High Concentration PAA (190ppm) for Short Contact Time (60 seconds)

| | Aerobic Plate Count (CFU/swab) | Yeast (CFU/swab) | Mold (CFU/swab) |
|--|--------------------------------|------------------|-----------------|
| Surface of Fish As Received | 126,000 | 69,800 | 2 |
| Surface of Fish Treated with 190 ppm PAA | 4,480 | 2,700 | 1 |
| Log ₁₀ Reduction PAA Solution vs. as received | <u>1.4</u> | <u>1.4</u> | Not Significant |

The table above illustrates that water containing a biocidal dose of PAA causes a substantial reduction in the number of surface-associated microorganisms. This is pertinent with spraybars, and on conveyors, after the fish have been headed, gutted and filleted.