

Australian Standard<sup>®</sup>

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**CLEANING AND SANITIZING OF  
PLANT AND EQUIPMENT IN THE  
SEAFOOD INDUSTRY**

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This Australian Standard was prepared by Committee FT/5, Cleaning and Sanitization—Meat, Poultry, and Seafood Industry. It was approved on behalf of the Council of the Standards Association of Australia on 30 July 1987 and published on 5 October 1987.

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The following interests are represented on Committee FT/5:

Australian Chemical Specialties Manufacturers Association  
Australian Fishing Industry Council  
Australian Poultry Industries Association  
Australian Society for Microbiology Incorporated  
Commonwealth Advisory Laboratory on Dairy Detergents and Sanitizers  
Confederation of Australian Industry  
Council of Australian Food Technology Associations Incorporated  
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## PREFACE

This Standard was prepared by the Association's Committee on Cleaning and Sanitation in the Meat, Poultry, Seafood Industries. It is one of a series, the others being:

- AS 2998      Cleaning and Sanitizing of Plant and Equipment in the Poultry Meat Industry
- AS 2997      Cleaning and Sanitizing of Plant and Equipment in the Meat Industry
- AS 2996      Cleaning and Sanitizing of Plant and Equipment in the Egg Handling and Processing Industry

The principal purpose of the Standard is to improve the quality of seafood products by prescribing effective practices for the cleaning and sanitizing of equipment, premises and personal gear in seafood processing plants. It is designed to be used by plant personnel, Advisory Bodies and detergent and sanitizer manufacturers.

Because of the importance of an understanding of the principles underlying the specific cleaning recommendations, Section 3 is devoted to the need for effective cleaning and the ways in which detergents and sanitizers achieve that purpose. This is complemented by a discussion in Section 4 of the practical factors which affect the application and efficacy of cleaning systems.

Section 5 describes the basic cleaning systems to be used in seafood plants and Section 6 deals with the cleaning of specific areas of plant and equipment.

Section 7 deals with the important topic of the hygiene of personnel engaged in food processing.

It is recognized that cleaning systems which differ from those described in this Standard may be satisfactory in specific circumstances.

A number of appendices are also included to give more specific information on items which are important to the effective application of the cleaning systems described. These include water quality, effluent disposal, surfaces, microbiological testing of surfaces, mechanical cleaning systems and detergents and sanitizers.

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STANDARDS ASSOCIATION OF AUSTRALIA

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**Australian Standard**

**CLEANING AND SANITIZING OF PLANT AND EQUIPMENT  
IN THE SEAFOOD INDUSTRY**

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SECTION 1. SCOPE AND GENERAL

**1.1 SCOPE.** This Standard sets out cleaning practices to be observed in fishing vessels, receival areas, processing plants, by-product plants, markets, vehicles and retail outlets in order to achieve and maintain a satisfactory level of hygiene. It describes the principles of cleaning as well as specific methods for particular items of equipment, internal surfaces of buildings and personal gear. Hygiene of personnel is also discussed.

**1.2 DEFINITIONS.** For the purpose of this Standard, the definitions below apply.

**1.2.1 Clean seawater**—seawater which meets the same microbiological standards as potable water and which is free from objectionable matter.

**1.2.2 Clean surface**—surface, free from soil, that will not contaminate food products in contact with it and that complies with the following requirements:

- (a) Contamination or oxidation is not visible under good lighting when the surface is dry.
- (b) No objectionable odour is discernible.
- (c) The surface does not feel greasy when rubbed with clean fingers.
- (d) No sign of fluorescence is detectable when the surface is inspected with a longwave (340 nm to 380 nm) ultraviolet light.

NOTE: See Clause 1.2.9 Sanitized clean surface.

**1.2.3 Cleaning methods.**

**1.2.3.1 Manual cleaning**—an operation in which the detergent solution is brought into contact with the soil and surfaces to be cleaned by physical effort on the part of the operator, e.g. brushing or use of non-metallic scouring pad.

**1.2.3.2 Foam application**—an operation in which the detergent or sanitizer foam is kept in contact with the soil and surfaces for an extended period.

**1.2.3.3 Gel application**—an operation in which gelled detergent is kept in contact with the soil and surfaces to be cleaned for an extended time.

**1.2.3.4 Mechanized cleaning**—an operation in which the surfaces are cleaned by a detergent solution assisted mechanically, e.g. mechanical scrubbers or high-pressure sprays (see Appendix C).

**1.2.3.5 Circulation cleaning-in-place (CIP)**—a method of cleaning equipment without dismantling, using no direct mechanical aid to remove the soil but depending on solution flows, temperature and the properties of the detergent to achieve a satisfactory result.

**1.2.4 Cleaning and sanitizing systems.**

**1.2.4.1 Routine cleaning and sanitizing systems**—sequences which usually include dry cleaning, rinses, detergents and sanitizers applied regularly to surfaces after processing to control the accumulation of soil on

those surfaces and to minimize the microbiological contamination of the product from the surfaces.

**1.2.4.2 Periodic cleaning and sanitizing systems**—sequences which usually include dry cleaning, rinses, detergents and sanitizers applied infrequently to control the accumulated soil and contaminating microorganisms which remain after the application of the routine cleaning system.

**1.2.5 Degree of foaming**—the nature and extent of foaming characteristics of agitated solutions of detergents and sanitizers.

NOTE: For practical purposes, these products are classified according to whether they form a stable or unstable foam. The unstable foams may be divided into low-foaming and high foaming categories.

**1.2.6 Detergents**—chemicals or blends of chemicals capable of assisting cleaning when added to water (see Appendix F).

NOTE: An effective detergent is one which, when applied by methods described in this Standard, achieves surfaces which comply with requirements of Clause 1.2.2.

**1.2.7 Dry clean**—removal of bulk soils without the use of water, e.g. by scraping or sweeping.

**1.2.8 Rinses.**

**1.2.8.1 Pre-rinse**—a rinse of water to dislodge easily-removable parts of the soil.

**1.2.8.2 Intermediate rinse**—a rinse of water applied between two detergent treatments or between a detergent and a sanitizer treatment in a cleaning operation.

**1.2.8.3 Post-rinse**—a final rinse of water to remove detergent or sanitizer residues.

**1.2.8.4 Pre-production rinse**—a rinse of water to wet all surfaces immediately before start of processing.

**1.2.9 Sanitized clean surface**—a clean surface as defined in Clause 1.2.2 which is substantially free from pathogenic microorganisms and undesirable numbers of spoilage organisms following the application of a sanitizer (see Clause 1.2.10).

NOTE: Appendix B details suggested procedures for microbiological assessment of surfaces.

**1.2.10 Sanitizer**—a substance that is capable of reducing the numbers of viable microorganisms on clean surfaces to a level satisfactory for product quality and public health, without adversely affecting the food (see Appendix F).

NOTE: An effective sanitizer is one which achieves sanitized, clean surfaces (see Clause 1.2.9) when applied by the practices described in this Standard.

**1.2.11 Seafood processing plant**—premises approved and registered by the appropriate authority for the handling and processing of seafood products. The sites included are: boats, receival areas, processing plants, by-products areas, markets, distribution and retail locations.