AS 2070.7—1987
UDC 678.74:664

Australian Standard®
2070.7—1987

PLASTICS MATERIALS FOR FOOD CONTACT USE

Part 7—POLYVINYLIDENE CHLORIDE (PVDC)

STANDARDS ASSOCIATION OF AUSTRALIA
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This Australian standard was prepared by Committee FT/8, Plastics for Food Contact. It was approved on behalf of the Council of the Standards Association of Australia on 22 November 1986 and published on 2 February 1987.

The following interests are represented on Committee FT/8:

Australian Federation of Consumer Organizations

Australian Institute of Food Science and Technology

Commonwealth Department of Health

Confederation of Australian Industry

Council of Australian Food Technology Associations Incorporated

CSIRO, Division of Food Research

Department of Health, Qld

Department of Health, Vic.

Department of Science

Packaging Council of Australia

Plastics Institute of Australia Incorporated

Public Health Department, W.A.

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This standard was issued in draft form for comment as DR 79099 and 85130.

AUSTRALIAN STANDARD

PLASTICS MATERIALS FOR FOOD CONTACT USE

Part 7 POLYVINYLIDENE CHLORIDE (PVDC)

AS 2070.7—1987

First published 1987

PUBLISHED BY THE STANDARDS ASSOCIATION OF AUSTRALIA
STANDARDS HOUSE, 80 ARTHUR ST, NORTH SYDNEY, N.S.W.
ISBN 0 7262 4511 9

PREFACE

This standard was prepared at the request of the Commonwealth Government by the Association's Committee on Plastics for Food Contact under the direction of the Food Technology Standards Board.

It is one standard of a series dealing with plastics for food contact and sets out the requirements of polyvinylidene chloride (PVDC) plastics materials for use in the manufacture of plastics items for food contact use.

Polyvinylidene chloride polymers as produced may be used with or without further additives to manufacture plastics items for food contact use. In some cases, the plastics materials manufacturer or the compounder may incorporate additives such as colourants into the polymer.

Other standards in this series specify the requirements for various other plastics materials for food contact use. Where appropriate, any restrictions on the use of additives in plastics for the packaging of specific food types are stated, based on current toxicological data. However, the committee recognizes that the available toxicological data are incomplete.

A code of practice for the manufacture of plastics items for food contact use has been published, and test methods for checking the migration of compounds from plastics materials into food simulants are in the course of preparation.

It is emphasized that these standards need to be used in combination to provide a system of control of the migration of substances from plastics materials into food.

In preparing this standard, the committee has collated a list of additives that may be used in the production of PVDC plastics materials for food contact use. In general only those additives that have been approved by any of the following sources have been included:

(a) The Netherlands Packaging and Food Utensils Regulations.

(b) The U.S. Food and Drug Administration Regulations.

(c) The West Germany Federal Health Department recommendations.

(d) BPF/BIBRA* Code for Plastics for Food Applications.

Requests for alterations to this standard concerning the additives or other substances to be used in the preparation of PVDC plastics materials intended for food contact use should be made to SAA and must include relevant information.

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* British Plastics Federation/British Industrial Biological Research Association.

CONTENTS

FOREWORD

The various standards in this series, together with AS 2171 and the test methods* are intended to apply in every case where plastics materials are in contact with foodstuffs, e.g. in food processing equipment, food utensils and the plastics components of other food packaging materials.

The packaging and processing of food introduces the possibility of the migration or transfer of substances from the plastics packaging or wrapping materials into the food. It is essential that the formulation of the plastics materials is such that any migration of substances into the food from the plastics packaging or wrapping materials is minimized and, if migration does occur, no known toxic hazard will exist to the consumer of the food.

Toxic effects generally can be either 'acute', being more or less immediate following a single dose of a toxic substance as is the case in most forms of accidental poisoning, or 'chronic', being the result of repeated ingestion of a number of small doses each in themselves insufficient to cause an immediate acute reaction but in the long term having a cumulative effect.

The occurrence of acute toxicity due to plastics materials in contact with food is most unlikely since only trace quantities of potentially toxic materials are likely to migrate. Chronic effects, however, are possible where small quantities of biologically active substances transfer from packaging materials and are ingested in small amounts over a long period of time.

The high-molecular-mass polymer itself does not pose a toxic hazard, being inert and essentially insoluble in food.

In the preparation of the plastics material, numerous additives are used and the nature of these depends on the type of polymer being produced. Examples of the additives which may be used are catalysts, suspension and emulsifying agents, stabilizers and polymerization inhibitors. These additives are bound either chemically or physically to the polymer and may be present in their original or altered form. In addition, the polymerization process may leave trace quantities of residual monomer or low-molecular-mass polymer in the product. It is therefore necessary to specify the purity of the polymer to be used in the preparation of plastics materials intended for food contact use.

It is also necessary to consider the migration of substances from the plastics packaging materials and their levels in the food. The extent to which migration occurs will depend upon such factors as the contact area, the rate of transfer, the type of plastics material, the temperature and the contact time. It is therefore necessary to consider the intrinsic toxicity of each ingredient in the plastics material, and its ability to migrate under extreme conditions in an original or altered form and the amounts of such ingredients which may be safely ingested.

The migration of substances from the packaging into the food is also related to the type of food packaged in the plastics material. For example, foods such as alcoholic beverages, and edible fats and oils may extract substances more readily than dry foods such as cereals.

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* In course of preparation.

STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
for
PLASTICS MATERIALS FOR FOOD CONTACT USE

PART 7—POLYVINYLIDENE CHLORIDE (PVDC)

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This standard specifies requirements for polyvinylidene chloride (PVDC) compound plastics materials (in the form of granules, powder or dispersions) for use in the manufacture of plastics items for food contact use.

NOTES:

1. The more appropriate written name for PVDC plastics, as given in AS 1886 is poly(vinylidene chloride) plastics. However, the commonly used written name is polyvinylidene chloride and this is used in the title and text of this standard.
2. PVDC granules and powders are used in the manufacture of plastics items such as containers and plastics film.
3. PVDC dispersions are used to coat substrates such as paper, board, plastics films, foils and preformed materials used in the manufacture of flexible pouches, wrapping materials and other packaging items.

1.2 APPLICATION. Polyvinylidene chloride plastics materials shall comply with the requirements of Clause 1.5 and with the requirements of the following Sections as appropriate:

(a) Section 2—PVDC Granules and Powders

(b) Section 3—PVDC Dispersions

1.3 REFERENCED DOCUMENTS. The following standards are referred to in this standard:

AS 1886 Glossary of Terms Relating to Plastics

AS 2070 Plastics Materials for Food Contact Use
Part 6—Colourants

AS 2171 Code of Practice for the Manufacture of Plastics Items for Food Contact Applications.

1.4 DEFINITIONS. For the purpose of this standard, the definitions in AS 1886 apply.