AS 60068.2.52—2003
IEC 60068-2-52:1996

AS 60068.2.52

Australian Standard™

# Environmental testing

## Part 2.52: Tests—Test Kb: Salt mist, cyclic (sodium chloride solution)



Standards Australia

This Australian Standard was prepared by Committee EL-026, Protective Enclosures and Environmental Testing for Electrical/Electronic Equipment. It was approved on behalf of the Council of Standards Australia on 17 April 2003 and published on 19 June 2003.

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The following are represented on Committee EL-026:

Australian Chamber of Commerce and Industry

Australian Electrical and Electronic Manufacturer's Association

Electrical Compliance Testing Association

Electrical Regulatory Authorities Council

Electricity Supply Association of Australia

Testing Interests (Australia)

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# PREFACE

This Standard was prepared by the Standards Australia Committee EL-026, Protective Enclosures and Environmental Testing for Electrical/Electronic Equipment.

The objective of this Standard is to provide the electrotechnology industry with a complete set of environmental test procedures published as a series under AS 60068 *Environmental testing*. This Standard is Part 2.52 of that series.

This Standard is identical with, and has been reproduced from, IEC 60068-2-52:1996, *Environmental testing – Part 2-52: Tests—Test Kb: Salt mist, cyclic (sodium chloride solution)*.

As this Standard is reproduced from an International Standard, the following applies:

(a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.

(b) In the source text 'this international standard' should read 'this Australian Standard'.

(c) A full point should be substituted for a comma when referring to a decimal marker.

(d) Any French text on figures should be ignored.

In this Standard, the following print types are used:

– requirements proper: in arial type;

– *test specifications: in italic type;*

– explanatory matter: in smaller arial type.

Any international Standard referenced should be replaced by an equivalent Australian Standard when one is available. The availability of equivalent Australian Standards can be determined either from the Standards Australia catalogue or from the Standards Australia website (www.standards.com.au).

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STANDARDS AUSTRALIA

# Australian Standard

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## 1 Scope

This test is intended for application to components or equipment designed to withstand a salt-laden atmosphere, depending on the chosen severity. Salt can degrade the performance of parts manufactured using metallic and/or non-metallic materials.

The mechanism of salt corrosion on metallic materials is electrochemical, whereas the degradation effects experienced on non-metallic materials are caused by complex chemical reactions of the salts with the materials involved. The rate at which corrosive action takes place is dependent, to a large extent, on the supply of oxygenated salt solution to the surface of the test specimen, the temperature of the specimen and the temperature and humidity of the environment.

Apart from the corrosive effects, this test may be used to indicate deterioration of some non-metallic materials by assimilation of salts. In the following test methods, the period of spraying with the relevant salt solution is sufficient to wet the specimen thoroughly. Because this wetting is repeated after intervals of storage under humid conditions (severities (1) and (2)) and – in some cases severities ((3) to (6)) – supplemented by storage under a standard atmosphere for testing, it goes some way to reproducing the effects of natural environments.

Severities (1) and (2) are intended to be used for testing products which are used in a marine environment, or in close proximity to the sea. Severity (1) should be used to test products which are exposed to the environment for much of their operational life (e.g. ship radar, deck equipment). Severity (2) should be used to test products which may be exposed to the marine environment from time to time but will normally be protected by an enclosure (e.g. navigational equipment which will normally be used on the bridge or in a control room).

Additionally, severities (1) and (2) are commonly used as a general corrosion test in component quality assurance procedures.

Severities (3) to (6) are intended for products where, under normal use, there is a frequent change between salt-laden and dry atmosphere, e.g. automobiles and their parts.

Severities (3) to (6), compared to severities (1) and (2), therefore include an additional storage under a standard atmosphere for testing.

The period of dry atmosphere may happen, in practice, during breaks of operation, e.g. during the weekend. This inclusion of such a dry period in severities (3) to (6) leads to corrosion mechanism which can be quite different from those under constant humid conditions.

The test is accelerated compared with most service conditions. However, it is not possible to establish an overall acceleration factor for all kinds of specimens (see IEC 60355).