

Australian/New Zealand Standard™

**Explosive atmospheres**

**Part 6: Equipment protection by oil  
immersion 'o'**



## **AS/NZS 60079.6:2015**

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-014, Equipment for Explosive Atmospheres. It was approved on behalf of the Council of Standards Australia on 20 October 2015 and on behalf of the Council of Standards New Zealand on 22 October 2015.  
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The following are represented on Committee EL-014:

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# Australian/New Zealand Standard™

## Explosive atmospheres

### Part 6: Equipment protection by oil immersion 'o'

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## PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-014, Equipment for Explosive Atmospheres, to supersede AS/NZS 60079.6:2007.

The objective of this Standard is to set out the requirements for the design, construction, testing and marking of Ex equipment and Ex components with type of protection liquid immersion 'o' intended for use in explosive gas atmospheres.

This Standard is identical with, and has been reproduced from IEC 60079-6 Ed.4.0 (2015), *Explosive atmospheres, Part 6: Equipment protection by liquid immersion "o"*.

This Standard is to be read in conjunction with AS/NZS 60079.0, *Explosive atmospheres, Part 0: Equipment—General requirements*. Changes to the Standard introduced by this edition are listed in the IEC Foreword.

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

- (a) In the source text 'this part of IEC 60079' should read 'this Australian/New Zealand Standard'.
- (b) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

<i>Reference to International Standard</i>	<i>Australian/New Zealand Standard</i>
IEC	AS/NZS
60079 Explosive atmospheres	60079 Explosive atmospheres
60079-0 Part 0: Equipment—General requirements	60079-0 Part 0: Equipment—General requirements
60156 Insulating liquids—Determination of the breakdown voltage at power frequency—Test method	AS 1767 Insulating liquids 1767.2.1 Part 2.1: Test methods—Determination of the breakdown voltage at power frequency
60247 Insulating liquids—Measurement of relative permittivity, dielectric dissipation factor ( $\tan \delta$ ) and d.c. resistivity	1767.2.2 Part 2: Test methods: Measurement of relative permittivity, dielectric dissipation factor ( $\tan \delta$ ) and d.c. resistivity
60529 Degrees of protection provided by enclosures (IP Code)	60529 Degrees of protection provided by enclosures (IP Code)
ISO	
2592 Determination of flash and fire points—Cleveland open cup method	2585 Determination of flash and fire points—Cleveland open cup method
2719 Determination of flash point—Pensky-Martens closed cup method	2106 Methods for the determination of the flash point of flammable liquids (closed cup) 2106.2 Part 2: Determination of flash point—Pensky-Martens closed cup method

Only normative references that have been adopted as Australian or Australian/New Zealand Standard have been listed.

The term 'normative' has been used in this Standard to define the application of the annex to which it applies. A 'normative' annex is an integral part of a Standard.

## CONTENTS

	<i>Page</i>
1 Scope.....	6
2 Normative references.....	6
3 Terms and definitions .....	7
4 Constructional requirements .....	8
4.1 General.....	8
4.2 Levels of protection and requirements of electrical equipment.....	8
4.2.1 Level of Protection .....	8
4.2.2 Requirements for Level of Protection “ob” .....	9
4.2.3 Requirements for Level of Protection “oc” .....	9
4.3 Switching device .....	9
4.4 Creepage and clearance .....	9
4.5 Liquid containment enclosures.....	10
4.5.1 General .....	10
4.5.2 Sealed enclosures .....	10
4.5.3 Unsealed enclosures.....	10
4.5.4 Outlet of breathing device or pressure relief device.....	10
4.5.5 Enclosures intended to be opened.....	10
4.5.6 Determination of the maximum/minimum criteria of the protective liquid .....	10
4.6 Immersion depth .....	11
4.7 Protective liquid level indication.....	11
4.7.1 General .....	11
4.7.2 Remote-indicating protective liquid level indicator .....	12
4.7.3 Safety devices for Level of Protection “ob” .....	12
4.8 Temperature limitations .....	12
4.8.1 General .....	12
4.8.2 Maximum Surface Temperature.....	12
4.8.3 Flashpoint of the protective liquid .....	12
4.9 Field wiring connections to liquid immersion equipment.....	12
4.10 Constructional elements of enclosures.....	12
4.10.1 Operating rods, shafts etc. ....	12
4.10.2 Devices for draining of liquid .....	13
5 Protective Liquid.....	13
5.1 Protective liquid specification .....	13
5.2 Detailed alternative specification .....	13
5.3 Group I equipment .....	13
5.4 Liquid contamination and gassing that may result from arcing .....	13
5.5 Total volume of the protective liquid.....	14
6 Verifications and tests .....	14
6.1 Type tests .....	14
6.1.1 Overpressure test on sealed enclosures .....	14
6.1.2 Reduced pressure test on sealed enclosures .....	14
6.1.3 Overpressure test on unsealed enclosures .....	14
6.1.4 Maximum temperature.....	14
6.1.5 Switching Tests.....	15
6.2 Routine tests.....	15

	<i>Page</i>
6.2.1 Sealed enclosures .....	15
6.2.2 Unsealed enclosures.....	15
7 Marking .....	15
8 Instructions.....	16
Annex A (normative) Selection and erection requirements .....	17
Annex B (normative) Maintenance requirements .....	18
Annex C (normative) Repair and Overhaul requirements.....	19
Bibliography .....	20
Table 1 – Working voltage.....	9
Table 2 – Depth of immersion .....	11
Table B.1 – Inspection requirements .....	18

## IEC FOREWORD

The significant changes with respect to the previous edition are listed below:

- Edition 4 represents a major technical revision of the requirements for oil immersion “o” and should be considered as introducing all new requirements. The normal “Table of Significant Changes” has not been included for this reason. In particular:
  - The requirements for oil immersion “o” have been redefined into liquid immersion , levels of protection “ob” and “oc” as recommended by the responses to 31/715/DC
  - The ability to protect sparking contacts has been added to both “ob” and “oc”
- Additional requirements have been introduced for the protective liquid.

## AUSTRALIAN/NEW ZEALAND STANDARD

**Explosive atmospheres****Part 6:  
Equipment protection by oil immersion 'o'****1 Scope**

This part of IEC 60079 specifies the requirements for the design, construction, testing and marking of Ex Equipment and Ex Components with type of protection liquid immersion "o" intended for use in explosive gas atmospheres.

Ex Equipment and Ex Components of type of protection liquid immersion "o" are either:

- Level of Protection "ob" (EPL "Mb" or "Gb")
- Level of Protection "oc" (EPL "Gc")

For Level of Protection "ob", this standard applies where the rated voltage does not exceed 11 kV r.m.s. a.c. or d.c.

For Level of Protection "oc", this standard applies where the rated voltage does not exceed 15 kV r.m.s. a.c. or d.c.

NOTE Requirements for higher voltages are under consideration.

This standard supplements and modifies the general requirements of IEC 60079-0. Where a requirement of this standard conflicts with a requirement of IEC 60079-0, the requirement of this standard takes precedence.

**2 Normative references**

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60079-0, *Explosive Atmospheres – Part 0: Equipment – General requirements*

IEC 60156, *Insulating liquids – Determination of the breakdown voltage at power frequency – Test method*

IEC 60247, *Insulating liquids – Measurement of relative permittivity, dielectric dissipation factor (tan  $\delta$ ), and d.c. resistivity*

IEC 60296, *Fluids for electrotechnical applications – Unused mineral insulating oils for transformers and switchgear*

IEC 60529, *Degrees of protection provided by enclosures (IP Code)*

IEC 60814, *Insulating liquids – Oil impregnated paper and pressboard – Determination of water by automatic coulometric Karl Fischer titration*

IEC 60836, *Specifications for unused silicone insulating liquids for electrotechnical purposes*