

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Attachment materials for electronic assembly –
Part 1-3: Requirements for electronic grade solder alloys and fluxed and non-
fluxed solid solder for electronic soldering applications**

**Matériaux de fixation pour les assemblages électroniques –
Partie 1-3: Exigences relatives aux alliages à braser de catégorie électronique et
brasure solide fluxée et non-fluxée pour les applications de brasage
électronique**



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ATTACHMENT MATERIALS FOR ELECTRONIC ASSEMBLY –**Part 1–3: Requirements for electronic grade solder alloys and fluxed and non-fluxed solid solder for electronic soldering applications**

FOREWORD

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International Standard IEC 61190-1-3 has been prepared by IEC technical committee 91: Electronics assembly technology.

This third edition cancels and replaces the second edition, published in 2007 and Amendment 1:2010. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) The maximum impurity level of Pb has been revised and the table of lead free solder alloys includes some additional lead free solder alloys.

The text of this standard is based on the following documents:

FDIS	Report on voting
91/1468/FDIS	91/1488/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

A list of all parts in the IEC 61190 series, under the general title *Attachment materials for electronic assembly*, can be found on the IEC website.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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(KR patent application number: KR10-2007-0050905)
KOREA Institute of Industrial technology
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KR PAT No.10-0445350
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JP PAT No.3152945 , and the foreign patents
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JP PAT No.3296289, and the foreign patents
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ATTACHMENT MATERIALS FOR ELECTRONIC ASSEMBLY –

Part 1–3: Requirements for electronic grade solder alloys and fluxed and non-fluxed solid solder for electronic soldering applications

1 Scope

This part of IEC 61190 prescribes the requirements and test methods for electronic grade solder alloys, for fluxed and non-fluxed bar, ribbon, powder solders and solder paste, for electronic soldering applications and for "special" electronic grade solders. For the generic specifications of solder alloys and fluxes, see ISO 9453. This document is a quality control document and is not intended to relate directly to the material's performance in the manufacturing process.

Special electronic grade solders include all solders which do not fully comply with the requirements of standard solder alloys and solder materials listed herein. Examples of special solders include anodes, ingots, preforms, bars with hook and eye ends, and multiple-alloy solder powders.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60194:2015, *Printed board design, manufacture and assembly – Terms and definitions*

IEC 61189-5-2:2015, *Test methods for electrical materials, printed boards and other interconnection structures and assemblies – Part 5-2: General test methods for materials and assemblies – Soldering flux for printed board assemblies*

IEC 61189-5-3:2015, *Test methods for electrical materials, printed boards and other interconnection structures and assemblies – Part 5-3: General test methods for materials and assemblies – Soldering paste for printed board assemblies*

IEC 61189-5-4:2015, *Test methods for electrical materials, printed boards and other interconnection structures and assemblies – Part 5-4: General test methods for materials and assemblies – Solder alloys and fluxed and non-fluxed solid wire for printed board assemblies*

IEC 61190-1-1:2002, *Attachment materials for electronic assembly – Part 1-1: Requirements for soldering fluxes for high-quality interconnections in electronics assembly*

IEC 61190-1-2, *Attachment materials for electronic assembly – Part 1-2: Requirements for soldering pastes for high-quality interconnects in electronics assembly*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60194 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses: