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**Outline of Investigation for Acid Gas, Acidity and Conductivity of
Combusted Materials and Assessment of Halogens**

Issue Number: 2

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Summary of Topics

This is the second issue of the Outline of Investigation for Acid Gas, Acidity and Conductivity of Combusted Materials and Assessment of Halogens, based on the following standards:

- a) IEC 60754-1, Test on gases evolved during combustion of materials from cables – Part 1: Determination of the halogen acid gas content.***
- b) The recommended performance requirements in Informative Annex A of IEC 60754-2, Test on gases evolved during combustion of materials from cables – Part 2: Determination of acidity (by pH measurement) and conductivity.***
- c) IEC 62821-1, Halogen free low smoke thermoplastic insulated and sheathed cables of rated voltages up to and including 450/750 V – Part 1: general requirements, Annex B (normative), Assessment of halogens, Requirements for extruded material, Sample test.***
- d) IEC 62821-2, Electric cables – Halogen-free, low smoke, thermoplastic insulated and sheathed cables of rated voltages up to and including 450/750 V - Part 2: Test methods, Chemical test: Determination of halogens – Elemental test.***
- e) IEC 60684-2 Flexible insulating sleeving – Part 2: Methods of test, Determination of low levels of fluorine) Methods A (Ion selective electrode method fluoride) or B (Alizarin fluorine blue method.***

This outline is issued to document the assessment of individual materials tested to the aforementioned IEC test method standards.

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INTRODUCTION

1 Scope

1.1 These requirements cover tests and evaluation for the assessment of individual combustible materials used in wire and cable constructions. These requirements do not cover assessment of combined components of a cable construction.

1.2 All non-metallic cable materials including insulating and jacketing materials and other cable components (e.g. tapes, fillers, threads, pigments / colorants etc.) are eligible for evaluation to the requirements below;

a) IEC 60754-1, Test on gases evolved during combustion of materials from cables – Part 1: Determination of the halogen acid gas content and

b) IEC 60754-2, Test on gases evolved during combustion of materials from cables – Part 2: Determination of acidity (by pH measurement) and conductivity. Cable weighted pH and conductivity values are not to be used for the evaluation of test results in this outline.

c) IEC 62821-1, Halogen free low smoke thermoplastic insulated and sheathed cables of rated voltages up to and including 450/750 V – Part 1: general requirements, Annex B (normative), Assessment of halogens, Requirements for extruded material, Sample test.

1.3 The requirements may be applied to other material types if found to be appropriate.

1.4 The final acceptance of materials certified to IEC 60754-1, IEC 60754-2 or IEC 62821-1 is dependent upon its use in or as a complete product that complies with the requirements in the standard applicable to such a product.

1.5 Materials certified to IEC 60754-1 and IEC 60754-2 are not considered as non-halogen, non-halogenated, zero halogen, halogen-free, low halogen, low smoke zero halogen (LSZH) or any other related terminology.

1.6 Materials certified to the sample test requirements for extruded material in Annex B (normative), Assessment of halogens, Requirements for extruded material, Sample test in IEC 62821-1 are considered halogen-free or "HF".

1.7 This Outline does not investigate other properties of materials including flammability, toxicity or environmental risks.