The IECEE Hazardous Substances Testing Service (HSTS)

Electric and Electronic (E&E) product and component manufacturers and suppliers need to comply with ever intensifying regulations and requirements worldwide and must ensure that their products meet different national and regional regulations in order to be marketed and also to avoid possible recalls or legal suits.

This requires reliable tools to prove and demonstrate compliance in the content level of hazardous substances (HS) in electrical products. The IECEE[1] Hazardous Substances Testing Service (HSTS) was developed with this need in mind.

Tests for identification and measurement of the hazardous substances are currently performed according to the International Standard IEC 62321.

A manufacturer can demonstrate whether the percentage of hazardous substances in the parts and materials of its product comply with the relevant regulations through a Statement of Test Results (STR) issued by an internationally recognized IECEE Member National Certification Body (NCB). The STR is based on an associated Test Report issued by an IECEE qualified and accepted CB Scheme Testing Laboratory (CBTL).

It is issued online by the NCBs on the IECEE website www.iecee.org.

Background

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Concern over the presence of hazardous substances in electrical and electronic products has led many countries to pass legislation restricting their use.

Presently, the six substances listed below are of most concern as having potentially serious negative impact on human health and the environment:

- Lead (Pb)
- Mercury (Hg)
- Cadmium (Cd)
- Hexavalent Chromium (Cr(VI)
- Polybromobiphenyl (PBB)
- Polybromodiphenyl ethers (PBDE)

The consequence has been a growing pressure on manufacturers of electrical and electronic products and component/ materials to avoid or restrict the use of such substances and to comply with increasingly more demanding regulations. Not least has the restriction on the use of lead caused a need for replacing traditional soldering methods.

Under these circumstances, the Hazardous Substances Testing Service operated by the international IECEE System offers an excellent way of demonstrating restricted contents of the hazardous substances in a product, and a simple way of showing compliance with the relevant national regulations in different countries.

Why use the international Hazardous Substances Testing Service?

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The IECEE HSTS offers applicants third party test reports and attestations under the international IECEE System. IEC 62321 provides appropriate test methods. A Statement of Test Results and associated test report based on this Standard imply a precise analysis to verify the percentage of hazardous substances in the materials/ parts of the product according to the relevant regulations in different countries.

Key benefits

- Internationally recognized attestation
- Independent testing of compliance with relevant International Standards
- Saving of cost and time to market by avoiding repeat testing in different countries/regions

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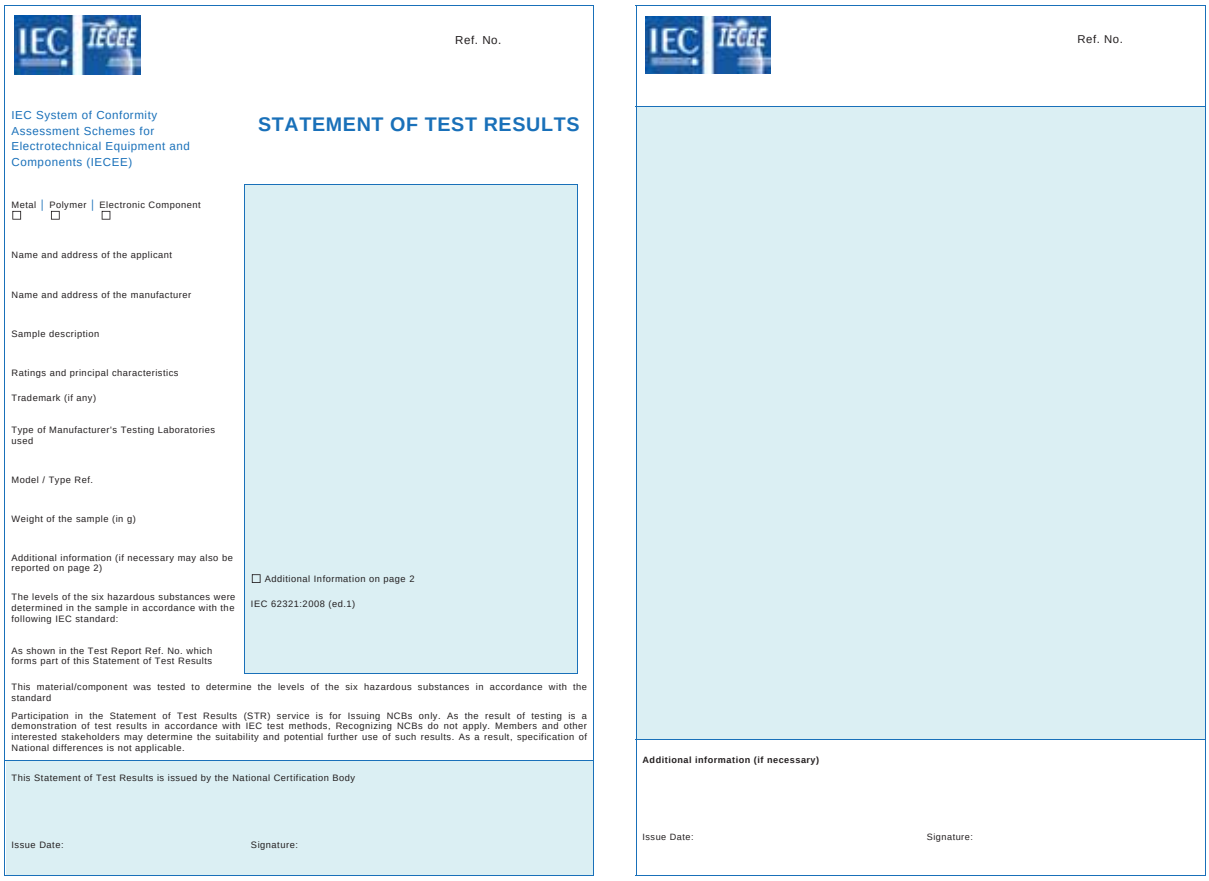
1 The IECEE is a multilateral certification system based on International Standards prepared by the International Electrotechnical Commission (IEC). The IEC uses the acronym IECEE for its System of Conformity Assessment Schemes for Electrotechnical Testing and Certification of Electrotechnical Equipment and Components.



Ref. No.

IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE)

STATEMENT OF TEST RESULTS

Metal ☐ | Polymer ☐ | Electronic Component ☐

Name and address of the applicant

Name and address of the manufacturer

Sample description

Ratings and principal characteristics

Trademark (if any)

Type of Manufacturer's Testing Laboratories used

Model / Type Ref.

Weight of the sample (in g)

Additional information (if necessary may also be reported on page 2)

The levels of the six hazardous substances were determined in the sample in accordance with the following IEC standard:

As shown in the Test Report Ref. No. which forms part of this Statement of Test Results

☐ Additional Information on page 2

IEC 62321:2008 (ed.1)

This material/component was tested to determine the levels of the six hazardous substances in accordance with the standard

Participation in the Statement of Test Results (STR) service is for Issuing NCBs only. As the result of testing is a demonstration of test results in accordance with IEC test methods, Recognizing NCBs do not apply. Members and other interested stakeholders may determine the suitability and potential further use of such results. As a result, specification of National differences is not applicable.

This Statement of Test Results is issued by the National Certification Body

Issue Date: Signature:

Ref. No.

Additional information (if necessary)

Issue Date: Signature:

Impact on industry

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Already in 2001, the authorities in The Netherlands demanded recall of 1.3 million products due to inclusion of cadmium in some of the marketed products' accessory cables. The estimated value of the items recalled at that time was 140 million CHF.

Since then, the industry has become more eco-conscious and developed programmes for preventing potential "toxic lockouts" and reputation damage from litigation leading to banning the product from the market.

There are now many ways to control and avoid the presence of hazardous substances in electrical/ electronic products.

Current legislation status

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In Europe, for example, the Restriction of Hazardous Substances Directive (RoHS) and the Waste Electrical and Electronic Equipment Directive (WEEE) came into effect in 2006. Both have since evolved; RoHS in 2011 and WEEE in 2012.

Not only the member states of the European Union (and associated countries including Iceland, Lichtenstein, Norway and Switzerland), but also several other industrial countries, such as Australia, China, Japan, South Korea and the United States now have similar legal restrictions on the use of hazardous substances.

Testing

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Testing is made in accordance with IEC 62321 to identify whether and to what extent the product contains the restricted substances, which generally are lead (Pb), mercury (Hg), cadmium (Cd), hexavalent chromium (Cr(VI), polybromobiphenyl (PBB) and polybromodiphenyl ethers (PBDE).

Hazardous substances	Method	Value [mg/kg]
1. Cadmium (Cd)		
2. Lead (Pb)		
3. Mercury (Hg)		
4. Hexavalent Chromium (Cr(VI)		
5. Sum of PBBs		
6. Sum of PBDEs		

The HS testing laboratories accepted by the IECEE are qualified for the necessary testing and measurements and are also familiar with the underlying work by IEC Technical Committee (TC) 111: Environmental standardization for electrical and electronic products and systems.

The testing laboratories are assessed both initially and periodically to ensure they have the required technical capabilities and quality assurance, including control of measurement uncertainty.

Upon completed testing, the testing laboratory issues an HS Test Report, which is conveyed to the responsible NCB for final evaluation/verification.

Statement of Test Results

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Based on a verified and accepted HS Test Report, the responsible NCB will issue the IECEE Statement of Test Results (STR):

A Statement of Test Results is a document issued by an NCB based on the attached HS Test Report, attesting that one or more specimens were tested according to the applicable standard(s) and that the specimens were found to contain the levels of hazardous substances identified.

As soon as an STR is issued, it is published on the IECEE website www.iecee.org where it can be easily accessed and consulted by any interested party.

The associated HS Test Report is, however, not published but is available online at a restricted website for subscribing customers.

The STRs are widely recognized by authorities and in the global market place, as well as by other NCBs within the IECEE CB Scheme.

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