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Health and safety in welding and allied processes — Laboratory method for sampling fume and gases —

Part 4: Fume data sheets

Hygiène et sécurité en soudage et techniques connexes — Méthode de laboratoire d'échantillonnage des fumées et des gaz —

Partie 4: Fiches d'information sur les fumées



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 15011-4 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 121, *Welding* in collaboration with Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 9, *Health and safety*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

ISO 15011 consists of the following parts, under the general title *Health and safety in welding and allied processes — Laboratory method for sampling fume and gases generated by arc*:

- *Part 1: Determination of emission rate and sampling for analysis of particulate fume*
- *Part 2: Determination of emission rates of gases, except ozone*
- *Part 3: Determination of ozone concentration using fixed point measurements*
- *Part 4: Fume data sheets*
- *Part 5: Identification of thermal-degradation products generated when welding or cutting through products composed wholly or partly of organic materials*

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Introduction

Welding and allied processes produce airborne particles and gaseous by-products that can be harmful to human health. Knowledge of the quantity and composition of the airborne particles and gases emitted can be useful for occupational hygienists in assessing workplace exposure and in determining appropriate control measures.

Welding processes, consumables and parameters give rise to various fume emission rates, which in turn lead to different welder exposures. Emission rate cannot be used directly to assess exposure. However, processes, consumables and welding parameters that give lower emission rates generally result in lower welder exposures than processes with higher emission rates used in the same working situation.

The purpose of this part of ISO 15011 is to specify conditions under which fume is generated for the purpose of obtaining fume emission and chemical composition data for use in health and safety applications. Clear instructions and supporting informative guidance is provided in order to ensure that the welding conditions used are selected thoughtfully according to a standardized procedure. At the same time, the need to fully report the welding conditions used in the test is emphasised, and an example is provided of how such information is to be conveyed on a fume data sheet. This part of ISO 15011 also gives information about how the data obtained can be used.

It has been assumed in the drafting of this part of ISO 15011 that the execution of its provisions and the interpretation of the results obtained are entrusted to appropriately qualified and experienced people.

Requests for official interpretations of any aspect of this part of ISO 15011 should be directed to the Secretariat of ISO/TC 44/SC 9 via your national standards body, a complete listing of which can be found at <http://www.iso.org>.