



# Standard Practice for Control of Respiratory Hazards in the Metal Removal Fluid Environment<sup>1</sup>

This standard is issued under the fixed designation E2889; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This practice sets forth guidelines to control respiratory hazards in the metal removal environment.

1.2 This practice does not include prevention of dermatitis which is the subject of Practice E2693 but it does adopt a similar systems management approach with many control elements in common.

1.3 This practice focuses on employee exposure via inhalation of metal removal fluids and associated airborne agents.

1.4 Metal removal fluids used for wet machining operations (such as cutting, drilling, milling or grinding) that remove metal to produce the finished part are a subset of metalworking fluids. This practice does not apply to other operations (such as stamping, rolling, forging or casting) that use metalworking fluids other than metal removal fluids. These other types of metalworking fluid operations are not included in this document because of limited information on health effects, including epidemiology studies, and on control technologies. Nonetheless, some of the exposure control approaches and guidance contained in this document may be useful for managing respiratory hazards associated with other types of metalworking fluids.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

## 2. Referenced Documents

### 2.1 ASTM Standards:<sup>2</sup>

D1356 Terminology Relating to Sampling and Analysis of Atmospheres

D2881 Classification for Metalworking Fluids and Related Materials

D7049 Test Method for Metal Removal Fluid Aerosol in Workplace Atmospheres

E1302 Guide for Acute Animal Toxicity Testing of Water-Miscible Metalworking Fluids

E1370 Guide for Air Sampling Strategies for Worker and Workplace Protection

E1497 Practice for Selection and Safe Use of Water-Miscible and Straight Oil Metal Removal Fluids

E1542 Terminology Relating to Occupational Health and Safety

E1972 Practice for Minimizing Effects of Aerosols in the Wet Metal Removal Environment

E2144 Practice for Personal Sampling and Analysis of Endotoxin in Metalworking Fluid Aerosols in Workplace Atmospheres

E2148 Guide for Using Documents Related to Metalworking or Metal Removal Fluid Health and Safety

E2169 Practice for Selecting Antimicrobial Pesticides for Use in Water-Miscible Metalworking Fluids

E2275 Practice for Evaluating Water-Miscible Metalworking Fluid Bioresistance and Antimicrobial Pesticide Performance

E2523 Terminology for Metalworking Fluids and Operations

E2563 Practice for Enumeration of Non-Tuberculosis *Mycobacteria* in Aqueous Metalworking Fluids by Plate Count Method

E2564 Practice for Enumeration of *Mycobacteria* in Metalworking Fluids by Direct Microscopic Counting (DMC) Method

E2657 Test Method for Determination of Endotoxin Concentrations in Water-Miscible Metalworking Fluids

E2693 Practice for Prevention of Dermatitis in the Wet Metal Removal Fluid Environment

E2694 Test Method for Measurement of Adenosine Triphosphate in Water-Miscible Metalworking Fluids

<sup>1</sup> This test method is under the jurisdiction of ASTM Committee E34 on Occupational Health and Safety and is the direct responsibility of Subcommittee E34.50 on Health and Safety Standards for Metal Working Fluids.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.