

Effects of Welding on Health, IX

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American Welding Society

Key Words — Welding, health, cancer, disease, exposure, fumes, gases, literature review, noise, radiation, toxicology

Effects of Welding on Health IX

Research performed by Biomedical Toxicology Associates, Frederick, Maryland, under contract with the American Welding Society and supported by industry contributions.

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Abstract

This literature review, with 232 citations, was prepared under contract to the American Welding Society for its Safety and Health Committee. The review deals with studies of the fumes, gases radiation, and noise generated during various arc welding processes. Section 1 summarizes recent studies of occupational exposures, Section 2 contains information related to the human health effects, and Section 3 discusses the effects of welding on animals and cell cultures.

Prepared for
Safety and Health Committee
American Welding Society
550 N.W. LeJeune Road
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International Standard Book Number: 0-87171-462-0

American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126

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Foreword

(This Foreword is not a part of *Effects of Welding on Health IX*, but is included for information purposes only.)

This literature review was prepared for the Safety and Health Committee of the American Welding Society to provide an assessment of current information concerning the effects of welding on health, as well as to aid in the formulation and design of research projects in this area, as part of an on going program sponsored by the Committee. Previous work consists of the reports *Effects of Welding on Health I* through *VIII* each covering approximately 18 months to two years. Conclusions based on this review and recommendations for further research are presented in the introductory portions of the report. Referenced materials are available from:

Biomedical Toxicology Associates
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Comparative Listing — Welding Processes

Explanatory Note: Terms used in the technical literature sometimes do not correspond to those recommended by AWS in its publication ANSI/AWS A3.0, *Standard Welding Terms and Definitions*.

Accordingly, the following list may aid the reader in identifying the process in use.

EWH — IX		Preferred AWS Term
Gas or Flame Cutting	(OC)	Oxygen Cutting or (OFC) Oxyfuel Gas Cutting
Gas Welding	(OFW)	Oxyfuel Gas Welding or (OAW) Oxyacetylene Welding
MAG	(GMAW)	— (with specified shielding gas)
MIG, GMA	(GMAW)	Gas Metal Arc Welding
MMA, SMA	(SMAW)	Shielded Metal Arc Welding
TIG	(GTAW)	Gas Tungsten Arc Welding
Wire		Electrode

Acknowledgments

Funds for this project were provided by the American Welding Society.

The American Welding Society gratefully acknowledges the financial support of the program by industry contributions.

Supporting Organizations

Air Products and Chemicals, Incorporated
Airco Welding Products
Allis-Chalmers
Alloy Rods Division, The Chemetron Corporation
AWS Detroit Section
AWS New Orleans Section
Arcos Corporation
The Binkley Company
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Teledyne-McKay, Incorporated
Trinity Industries, Incorporated
Truck Trailer Manufacturers Association
Walker Stainless Equipment Company
Weld Tooling Corporation

Many other organizations have also made contributions to support the ongoing program from May 1979 to the present.

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