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Asbestos



Chrysotile asbestos fiber close up
Photo by © Getty Images

Asbestos is the name used to group a class of naturally occurring mineral fibers that have been widely used for industrial processes and products and is associated with adverse effects on human health. Asbestos fibers have industrial and commercial applications because of their strength, flexibility and electrical and heat resistant properties. Some examples of products that may contain asbestos include automobile brakes, insulation materials, and cement. When the mineral fibers are handled, they can be released into the air and be inhaled, because of their microscopic size and fibrous nature, which can lead to asbestos accumulating in the lungs and causing respiratory illness. Exposure to asbestos has been associated with adverse health effects such as lung cancer, asbestosis, and mesothelioma.

Spotlight

[CDC MMWR: Malignant Mesothelioma Mortality — United States, 1999–2015](#)

Asbestos Resources

Prevention




Asbestos Fibers and Other Elongate Mineral Particles: State of the Science and Roadmap for Research
DHHS (NIOSH) Publication Number 2011-159 (March 2011)
This document is intended as one step in the process. NIOSH intends to pursue partnerships with other federal agencies and stakeholders to help focus the scope of the research that can contribute to the scientific understanding of asbestos and other mineral fibers, to fund and conduct the research activities, and to develop and disseminate educational materials describing results from the mineral fiber research and their implications for occupational and public health policies and practices.

NIOSH Recommendations for Limiting Potential Exposures of Workers to Asbestos Associated with Vermiculite from Libby, Montana
DHHS (NIOSH) Publication Number 2003-141 (2003)
Fact Sheet describes Vermiculite and Asbestos and provides recommendations to prevent occupational exposures.

Asbestos Bibliography (Revised)
DHHS (NIOSH) Publication No. 97-162 (1997)
Compendium of NIOSH research and recommendations on asbestos. It updates and supersedes the NIOSH document *Asbestos Publications* from June 1992.

Control of Asbestos Exposure During Brake Drum Service
DHHS (NIOSH) Publication No. 89-121 (1989)
Presents recommendations for engineering controls and work practices to reduce exposure to asbestos during brake maintenance operations, more...

Workplace Exposure to Asbestos: Review and Recommendations: NIOSH/OSHA Asbestos Work Group Recommendations
DHHS (NIOSH) Publication No. 81-103 (1980)
PDF only  2285 KB (41 pages)
Includes information about sampling and analysis of airborne asbestos, biologic effects of exposure, recommended occupational standards, more...

Current Intelligence Bulletin #31: Adverse Health Effects of Smoking and the Occupational Environment
DHHS (NIOSH) Publication No 79-122 (1979)
Identifies six ways in which smoking can interact with workplace exposures, including asbestos.

Revised Recommended Asbestos Standard
DHHS (NIOSH) Publication No. 77-169 (1976)
Review of information on the health effects of exposure to asbestos.

Criteria for a Recommended Standard: Occupational Exposure to Asbestos
DHHS (NIOSH) Publication No. 72-10267 (1972)
Presents the criteria and standards for preventing occupational diseases arising from exposure to asbestos dust.

Specific Medical Tests for OSHA Regulated Substances: Asbestos

- [1910.1001 Appendix D: Medical Questionnaires](#)
- [1910.1001 Appendix E: Interpretation and Classification of Chest Roentgenograms](#)
- [1910.1001 Appendix H: Medical Surveillance Guidelines for Asbestos \(Non-Mandatory\)](#)

Additional Resources

Books, Monographs

[Asbestiform Fibers: Nonoccupational Health Risks](#). Committee on Nonoccupational Health Risks of Asbestiform Fibers, Board on Toxicology and Environmental Health Hazards, National Research Council. Washington DC: National Academy Press, 1984. ISBN 0309034469

[Biomarkers: Medical and Workplace Applications](#). Mortimer L. Mendelsohn, Lawrence C. Mohr, and John P. Peeters, Eds. Washington DC: Joseph Henry Press, 1998. ISBN 0309064228

Governmental Resources

[Agency for the Toxic Substances and Disease Registry's Toxicological Profile for Asbestos \(2001\)](#)

- [ATSCR's Asbestos Index](#)
- [ATSDR's ToxFAQ's™: Asbestos](#)

[Occupational Safety and Health Administration \(OSHA\)](#)


[United States Geological Survey \(USGS\)](#)

[United States Environmental Protection Agency \(USEPA\)](#)

Sampling & Analysis

NIOSH Manual of Analytical Methods (NMAM), 4th edition
DHHS (NIOSH) Publication No. 94-113 (1994)
NMAM is a collection of methods for sampling and analysis of contaminants in workplace air, and in the blood and urine of workers who are occupationally exposed. These methods have been developed or adapted by NIOSH or its partners and have been evaluated according to established experimental protocols and performance criteria. NMAM also includes chapters on quality assurance, sampling, portable instrumentation, etc.

- **Method #7400 – Asbestos and Other Fibers by PCM**
PDF only 140 KB (15 pages)
- **Method #7402 – Asbestos by TEM**
PDF only 37 KB (7 pages)
- **Method #9000 – Asbestos, Chrysotile by XRD**
PDF only 42 KB (6 pages)

- [Method #9002 – Asbestos \(bulk\) by PLM](#)
PDF only  175 KB (9 pages)

NIOSH Pocket Guide to Chemical Hazards
DHHS (NIOSH) Publication No. 97-140

Exposure limits, Respirator Recommendations, First Aid, more...


The Pocket Guide is a source of general industrial hygiene information on several hundred chemicals/classes found in the work environment. Key data provided for each chemical/substance includes name (including synonyms/trade names), structure/formula, CAS/RTECS Numbers, DOT ID, conversion factors, exposure limits, IDLH, chemical and physical properties, measurement methods, personal protection, respirator recommendations, symptoms, and first aid.

- Asbestos
- Appendix E – Commonly Asked Questions and Answers about Part 84 Respirators

Occupational Health Guidelines for Chemical Hazards

DHHS (NIOSH) Publication No. 81-123 (January 1981)

Guidelines summarize pertinent information about chemical hazards for workers, employers, and occupational safety and health professionals.

- Asbestos
PDF only 

Glove Bag Containment

[An Evaluation of Glove Bag Containment in Asbestos Removal](#)

NIOSH Publication No. 90-119 (1990)

Examines the effectiveness of the glove bag control method to prevent asbestos emissions during the removal of asbestos-containing pipe lagging.

Home Contamination

[Protecting Workers’ Families: A Research Agenda: Report of the Workers’ Family Protection Task Force](#)

DHHS (NIOSH) Publication No. 2002-113 (2002)

Represents the Task Force’s commentary on the 1995 NIOSH Workers’ Home Contamination Study report, identifies gaps in the current knowledge about take-home exposures and related health effects, and provides a prioritized agenda for Federally sponsored research.

[Protect Your Family: Reduce Contamination at Home](#)

DHHS (NIOSH) Publication No. 97-125 (1997)

This report summarizes a NIOSH conducted a study of contamination of workers’ homes by hazardous substances transported from the workplace.

[Report to Congress on Workers’ Home Contamination Study Conducted Under the Workers’ Family Protection Act \(29 U.S.C. 671A\)](#)

DHHS (NIOSH) Publication No. 95-123 (September 1995)—Summary

This report to Congress and the Workers’ Family Protection Task Force summarizes incidents of home contamination, including the health consequences, sources, and levels of contamination.

Worker Notification Program

Through the NIOSH Worker Notification Program , NIOSH notifies workers and other stakeholders about the findings of past research studies related to a wide variety of exposures. The link below presents archival materials sent to participants in a study at an asbestos textile, friction, and packing plant who were exposed to asbestos.

- Asbestos Textile, Friction, and Packing Plant Workers (Asbestos)

Surveillance

[Occupational Respiratory Disease Surveillance \(ORDS\)](#)

NIOSH Topic Page about occupational respiratory disease medical screening and monitoring.

[Atlas of Respiratory Disease Mortality, United States: 1982-1993](#)

DHHS (NIOSH) Publication No. 98-157 (1998)

This report presents maps showing geographic distributions (by health service area) of mortality associated with selected respiratory conditions that together represent nearly all respiratory diseases. For categories of traditional occupational lung diseases mapped in this atlas (i.e., the pneumoconioses, including coal workers' pneumoconiosis, asbestosis, silicosis, byssinosis, and other and unspecified pneumoconioses), nearly all cases are attributable to hazardous occupational exposure.

[Worker Health Chartbook, 2000](#)

DHHS (NIOSH) Publication No. 2000-127 (2000)

The Worker Health Chartbook presents data and charts that characterize types of injuries and illnesses by gender, race, industry, and occupation. In May 2002, sections of the Chartbook were re-packaged in booklets highlighting fatal and nonfatal illnesses and injuries as well as a focus on mining.

[Work Related Lung Disease Surveillance Report 2002](#)

DHHS (NIOSH) Publication No. 2003-111 (2002)

The sixth of a series, the Work-Related Lung Disease (WoRLD) Surveillance Report 2002 provides information on various work-related respiratory diseases and associated exposures in the United States. The WoRLD Surveillance Report 2002 describes where these diseases are occurring (by industry and geographic location), who is affected (by race, gender, age, and occupation), how frequently they occur, and temporal trends.

[Work Related Lung Disease Surveillance Report 1999](#)

DHHS (NIOSH) Publication No. 2000-105 (1999)

This surveillance report presents summary tables and figures of occupational respiratory disease surveillance data focusing on various occupationally-relevant respiratory diseases, including pneumoconioses, occupational asthma and other airway diseases, and several other respiratory conditions. For many of these diseases, selected data on related exposures are also presented.

[Work Related Lung Disease Surveillance Report 1996](#)

DHHS (NIOSH) Publication No. 96-134 (1996)

This 1996 surveillance report provides national and state-specific summaries of occupational respiratory disease surveillance data focusing on pneumoconiosis mortality. Selected occupational respiratory hazard sampling data relevant to pneumoconiosis are also presented.

[Work Related Lung Disease Surveillance Report 1994](#)

DHHS (NIOSH) Publication No. 94-120 (1994)

The 1994 Work-Related Lung Disease Surveillance Report (WoRLD) provides a summary of surveillance data for various occupational respiratory diseases from a variety of sources. The majority of the data in this report is for the time period 1968-1990.

[Work Related Lung Disease Surveillance Report Supplement 1992](#)

DHHS (NIOSH) Publication No. 91-113s (1992)

Supplement to the first Work Related Lung Disease Surveillance Report (WoRLD) which presents updated data and data which was previously unrepresented including sex, race, geographic distribution, industry and occupation; number of discharges with silicosis or asbestosis from the National Hospital Discharge Survey; and reports of occupational asthma and silicosis from the SENSOR program.

[Work Related Lung Disease Surveillance Report](#)

DHHS (NIOSH) Publication No. 91-113 (1991)

First of a series, this report represents a summary of data for various occupational respiratory diseases divided into figures and tables.

[B-Reader Program](#)

[NIOSH B-Reader Program](#)

NIOSH B-Reader approval is granted to physicians who demonstrate proficiency in the classification of chest x-rays for the pneumoconioses using the International Labour Office (ILO) Classification System.

[Pneumoconiosis Conferences](#)

[Proceedings of the VIIth International Pneumoconioses Conference Part I](#)

NIOSH Publication No. 90-108 Part I (1990)

[Proceedings of the VIIth International Pneumoconioses Conference Part II](#)

NIOSH Publication No. 90-108 Part II (1990)

[NIOSHTIC-2 Search](#)

[NIOSHTIC-2 Search Results on Asbestos](#)

NIOSHTIC-2 is a searchable bibliographic database of occupational safety and health publications, documents, grant reports, and journal articles supported in whole or in part by NIOSH.

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