

In the early 1900's the first medically diagnosed death from asbestos occurred. By 1918 insurance companies refused to insure workers in asbestos related occupations. In 1955 asbestos was linked to cancer. Since that time the use of asbestos has been dramatically reduced, and extensive programs are being undertaken for its removal.

Asbestos is a term for a group of naturally occurring minerals that separate into fibers. These fibers are incombustible and have good thermal and electrical insulating properties. The most commonly used asbestos minerals are chrysotile and amosite. Asbestos has been used in cement products, plaster, fire proof textiles, vinyl floor tiles, thermal and acoustical insulation, sprayed materials, piping and brake linings.

Hard asbestos contained in materials such as vinyl floor tile do not generally create exposure problems. Only sanding, grinding or cutting will normally release the fibers in these compounds.

Soft or loosely bound (friable) asbestos containing materials can release asbestos fibers into the air with only minor disturbance to the material. This type of material has caused the greatest concern.

Asbestos fibers are thin, long, and light particles that can drift deeply into the lungs past the filtering defenses and penetrate the tissue. This normally results in a fibrosing response (a build up of material around a foreign body). This can produce a variety of diseases, some of which are fatal. These include asbestosis, lung cancer, and mesothelioma. It has been suspected of causing gastro-intestinal and colon cancer.



Photo courtesy of V & F Company, Akron, Ohio

STANDARDS The removal of asbestos should be done by trained and competent organizations. OSHA, EPA, and various state agencies have standards regulating the removal of asbestos. Prior to any asbestos removal, all should be contacted to be current with any revisions to their standards.

OSHA regulates the exposure to asbestos fibers (longer than 5 micrometers). The eight-hour time weighted average airborne concentration (TWA) of asbestos fibers shall not exceed two fibers per cubic centimeter of air (to be determined by the membrane method). No employee shall be exposed at any time to concentrations in excess of 10 fibers per cubic centimeter of air.

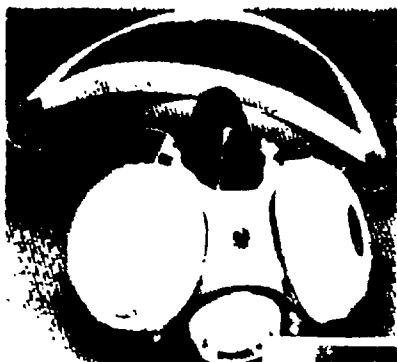
REQUIREMENTS & RECOMMENDATIONS:

- **Ventilation** must comply with ANSI Z9 2-1971
- **Wet removal method** preferred over dry method
- **Respirator Selection**
 - Less than 100X TWA - Air purifying respirator
 - Less than 100X TWA - Powered air purifying respirator
 - Greater than 100X TWA - Supplied air respirator
- **Special Clothing** - Coveralls, hoods, boots, and gloves are always recommended, mandatory if any employee is exposed to concentrations which exceed the ceiling level.
- **Change Rooms** - Must be provided if fixed place of employment, and if concentrations are above exposure limits.
- **Personal Monitoring** - Initial measurements shall be collected, and follow up samples taken to insure proper protection.
- **Caution Signs & Labels** - Signs shall be provided and displayed at each location where concentrations exceed exposure limits. Signs shall be posted at all approaches to affected area. Caution labels shall be affixed to all materials to be handled, stored, disposed, processed or transported.
- **Disposal Bags** - Properly marked and sealed bags (EPA 40CFR-Part 61 requires 6 mil bags).
- **Notification** - EPA requires written notification before any work may begin.
- **Principal Standards**
OSHA 1910.1001
U.S. Department of Labor, OSHA
Kansas City Regional Office
911 Walnut, Room 406
Kansas City, Missouri 64106
816-374-5861

EPA Code of Federal Regulations Title 40, Part 61
Wolfgang Brandner, Asbestos Coordinator
EPA Region VII
726 Minnesota Ave
Kansas City, Kansas 66101
913-236-2835

1246 Burlington • P.O. Box 34648 • North Kansas City, MO 64116 • 816-221-1401
800-346-3026 x243

RESPIRATORY PROTECTION



RESPIRATORY PROTECTION

- Less than 10X TWA
(20 fibers per cubic centimeter)

3M Easi Air - The most comfortable, reusable half mask available. The unique upper strap provides a balanced yoke suspension. The lower strap features a "no snag" buckle. A soft, pliable rubber facepiece. Available in two sizes — small/medium and medium/large.



3M 7255 - (TC-21C-265) High efficiency filters

3M 7268 - High Efficiency Retainer

3M 7258 - (TC-21C-289) Dust mist filter

3M 7289 - Dust Mist Retainer



3M 9920 - (TC-21C-202) Exhalation valve adds comfort on high heat jobs. Flame retardant. Sturdy construction resists collapsing in humid conditions. Lightweight, comfortable and maintenance free. 10/bag, 100/case, Case weight 10 lbs.



3M 8710 - (TC-21C-132) Excellent balance of performance and cost. Lightweight, comfortable, and maintenance free. 20/box, 240/case, Case weight 7 lbs.

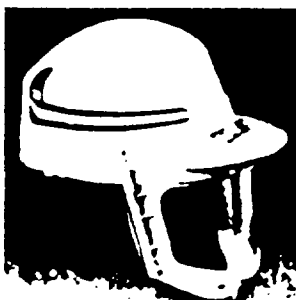
- Less than 100X TWA (200 fibers per cubic centimeter)

AIRLINE SYSTEMS —

3M AIRHAT - When the job is extremely hot and the air is highly contaminated, this system is ideal. It features a built-in powered air purifier for easy breathing. Built-in hard hat and face shield eliminates the need for glasses or goggles. Designed for reliability and easy, economical maintenance. The AIRHAT will operate for approximately 10 hours on one full charge.

W-316 AIRHAT - (TC-21C-225) Dust/mist system

W-344 AIRHAT - (TC-21C-246) High efficiency system. Includes W-2954 battery pack and W-2933 charger. One per case. Weight 10 lbs.



3M DISPOSABLE HOOD W-3082 - Similar to the Hardcap, but without head protection. Includes 2 hoods, 2 window covers, 1 head suspension, and 1 breathing tube clamp. Weight 2 lbs.

3M HARDCAP W-2860 - (TC-19C-69) Excellent for work in hot environments. Long shroud can be placed inside coveralls to provide cooling to the body. Hardcap provides head protection and need for eye protection is eliminated. Tyvek shroud is disposable. Includes 2 shrouds, hardcap suspension, 2 window covers and breathing tube clamp. Weight 3 lbs.



3M WHITECAP W-5005 - (TC-19C-69) Features a double shell fiberglass helmet which eliminates need for safety glasses or goggles. Features wide angle visibility with a lift front face shield. Shrouds are easily removed for cleaning.



DAY STAR

1246 BURLINGTON

P.O. BOX 34648

NORTH KANSAS CITY, MO 64118

ASBESTOS REMOVAL PRICE LIST

Effective October 1, 1985. Prices subject to change without notice

TERMS: 1% 10 days, net 30 days

FOB: Shipping Point

CUSTOMER SERVICE: 1-816-221-1401 • 1-800-346-3026 Ext. 243

RESPIRATORY PROTECTION

EASI-AIR

		PRICE PER EACH		
		<1 case	1-4 cases	5+ cases
7200	Half-mask Facepiece, Sml/Med (10/cs)	11.15	10.80	9.45
7300	Half-mask Facepiece, Med/Lge (10/cs)	11.15	10.80	9.45
7288	High Efficiency Retainer Caps (pair) (10 pr per cs)	2.50	2.35	2.15
7289	Dust Mist Retainer Caps (pair) (10 pr per cs)	3.00	2.85	2.55
7255	High Efficiency Cartridges (10/bx, 60/cs)	3.10	2.75	2.50
7256	Dust/Mist Filter (10/pack, 100 cs)	.40	.36	.32

DISPOSABLE RESPIRATORS

		<1 case	1-4 cases	5-9 cases	10+ cases
8710	Dust/Mist Respirator (20/box, 240 cs)	90	80	75	.66
9920	Dust/Mist/Fume Respirator (10/bag, 100/cs)	3.80	3.60	3.25	2.85

AIRHATS (Include battery pack and charger)

W-316	Dust/Mist Airhat	465.00	ea.
W-2951	Pre-filter, 25/pack	26.00	pack
W-2953-5	Dust/mist filter 5/pack	42.00	pack
W-344	High efficiency Airhat	534.00	ea
W-3003-4	High efficiency filter 4/pack	159.00	pack

AIRLINE SYSTEMS

W-3082	Disposable hood assembly	45.00	ea
W-2860	Hard cap assembly	73.00	ea
W-2866	Breathing tube for W-3082, W-2860	26.00	ea
W-5005	Whitecap	256.00	ea
W-5114	Breathing tube for Whitecap	27.00	ea
W-3018	Low pressure air regulating valve assy	62.00	ea
W-2907	High pressure air regulating valve assy	73.00	ea

AIR SUPPLY HOSE

W-3020-25	Low pressure 4-9 PSIG	90.00	ea
W-3020-50	Low pressure 5-11 PSIG	122.00	ea
W-3020-100	Low Pressure 6-15 PSIG	206.00	ea
W-9435-50	High pressure 25-35 PSIG	55.00	ea
W-9435-50	High pressure 25-35 PSIG	97.00	ea
W-9435-100	High pressure 30-45 PSIG	170.00	ea

RHINE AIR BREATHING PUMP

13-1	Pneumatic, 3 outlet, 12SCFM	960.00	ea
13-2	Electric, 2 outlet, 9SCFM	849.00	ea
13-5	Electric, 2 outlet, 12.5SCFM	1500.00	ea

AAA 000290

DISPOSABLE CLOTHING

		Per Case
NEW ET1412	Encase Economy Coverall, zipper, S, M, L, XL (25/cs)	49.75
NEW ET1414	Encase Coverall, hood, non-skid boots, elastic wrists (25/cs) S, M, L, XL	72.50
1412	Tyvek Coverall, zipper (25/cs) S, M, L, XL	53.75
1414	Tyvek Coverall, hood, non-skid boots, elastic wrists (25/cs) S, M, L, XL	77.50
414	Tyvek Non-skid Boots (200/cs)	100.00
2903	Tyvek Hood (250/cs)	87.50
NEW S2109	Disposable Bath Towels 3 ply scrim, 20x40 (300/cs)	50.00

GLOVE BAGS & SAWS

		Each
Safe-T-Strip Glove Bags		
108H	6" Horizontal with zip lock	45.25
110H	10" Horizontal with zip lock	49.25
114H	14" Horizontal with zip lock	52.50
206V	6" Vertical with zip lock	61.50
210V	10" Vertical with zip lock	63.50
214V	14" Vertical with zip lock	65.50

OTHER STYLES AND SIZES AVAILABLE

SAFE-T-STRIP SHOULDER STRAPS

30	30" Shoulder Strap, pair	10.00
60	60" Shoulder Strap, pair	14.00

SAFE-T-STRIP FLEXISAW

16	16" Saw with extra blade	5.00
20	20" Saw with extra blade	6.00
24	24" Saw with extra blade	9.00

NEW DISPOSABLE NE GLOVE BAG

DGB-1	Economy Glove Bag, 6 mil, flock lined glove	6.50
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EYE PROTECTION

		Per Pair
9142	Uvex Topsider	4.20
9300	Uvex Futura	5.20
551	Bouton Softside	2.00

WETTING AGENT

ASB-22	Gallon Container (4/cs)	59.80 cs
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LABELS AND SIGNS

ASB-1	Fiberglass Warning Sign 20"x14"	13.45 ea
ASB-2	Vinyl Warning Label, 3 1/2"x5", (500/roll)	50.00 roll
ASB-3	Barricade Tape, 3"x1000'	40.00 roll
NEW C95RC	30 mil Plastic Warning Sign 20"x14"	6.50 ea
NEW F84	A-Shaped Plastic Folding Floor Stand 12"x20"	11.50 ea

GLOVES

1408	8 oz Cotton	8.52 doz
3-12	Flock Lined Latex, sz 7, 8, 9	8.04 doz
7712	Knit Lined PVC, 12"	24.00 doz

BOOTS

G-924	Heavyweight 10" Overshoe with snap, sz 7-14	8.50 pr
9002	PVC Overshoe S-XL	4.95 pr

DISPOSABLE BAGS

		Per Roll	
		1-9	20+
3350	33"x 50", 6mm, preprinted warning (75/roll)	45.00	39.00
		10-19	
		41.25	

AIR SAMPLING PUMP

3000	Spectrex Adjustable Flow Pump	625.00 ea
	Millipore Loaded Filter Cassette, 8micron, 37mm (50/pack)	1.65 ea

DISPOSABLE CLOTHING

DISPOSABLE CLOTHING "Tyvek" style 1422A has shown to be the most effective barrier fabric available on the market. This material has been used in industry and government asbestos removal operations for years. Independent laboratory tests show that "Tyvek" allows less than one percent of submicron size fibers to pass through. Virtually all experts agree that less than five micron size fibers represent as severe or greater health hazard than fibers greater than five microns. All clothing illustrated is produced from style 1422 A "Tyvek".



1414 Coverall - Coverall complete with attached tie hood, non-skid boots, elasticized wrists, and zipper closure. Sizes small, medium, large, X-large. Packed 25 per case. Case weight 8 lbs.



414 Boots - Feature non-skid sole and plastic snap for adjustment. Size large/X-large. Packed 200 pair per case. Case weight 6 lbs.



2903 Hood - Full face opening hood is designed to give maximum protection for the neck and head area. One size. Packed 250 per case. Case weight 10 lbs.

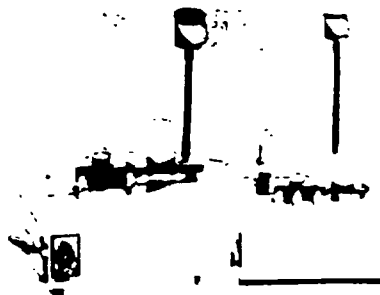


1412 Coverall - Standard coverall with zipper closure. Full cut allows freedom of movement and comfort. Sizes small, medium, large, X-large, XX-large. Packed 25 per case. Case weight 7 lbs.

RHINE AIR - At this level of exposure, clean air must be supplied to the worker. The RHINE AIR system provides an effective, efficient, and safe method to protect your workers. Since RHINE AIR breathing pumps are oil-less, they produce no carbon monoxide, oil vapor, or oil mist.

MODEL 13-1 PNEUMATIC - Features a three horsepower air motor drive that delivers a maximum of 12 SCFM at 10 to 11 P.S.I. Air motor requires a minimum 45 C.F.M. at 65 P.S.I. and a maximum P.S.I. Three man output. Weight: 77 lbs.

MODEL 13-2 ELECTRIC - Features a ¾ horsepower electric motor. Delivers a maximum of 9 SCFM at 10 to 11 P.S.I. Optional wiring for 115 or 230 volts. Two man capacity. Weight: 60 lbs.



3M W-9435 - Compressed Air Hose - ½" ID. Available in 25', 50', or 100' lengths.



GLOVE BAGS —

SAFE-T-STRIP - A breakthrough in asbestos removal technology. A unique 10 mil PVC zippered bag which isolates the insulation to be removed. Straps securely fasten sleeves of bag to pipe — eliminates time consuming taping — greatly reduces potential release of asbestos fibers when moving the bag. Unique double zipper allows bag to be moved quickly and easily past valves and hangers. When properly utilized, SAFE-T-STRIPS can eliminate the need for disposable clothing and area encapsulation.





9142 Topelder Glass - Permanent transparent side and top protection combined with comfort and quality make this plano the ultimate in eye protection. Eye size 52mm, Individually boxed, 25 pair per case, Case weight 4 lbs



9300 Futura Goggles - Revolutionary design gives the user an unrestricted panoramic view. Anti-fog coating on both sides of the lens. Can be worn over corrective glasses. Individually boxed, 10 pair per case. Case weight 4 lbs

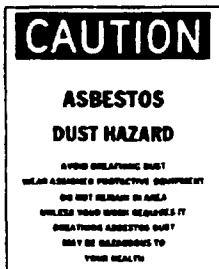


551 Softsides Goggle - Excellent protection at an economical price. Plastic hooded, indirect vents keep out dust and liquids. Individually boxed, 72 pair per case. Case weight 19 lbs



ASB-22 - Wetting agent concentrate. Specially formulated for wetting and removal of asbestos insulation. Meets EPA recommendations. One gallon containers, 4/case. Low temperature solution also available.

ASB-1

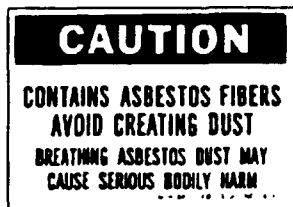


LABELS AND SIGNS - Complete line of signs, barricades, pipe markers, and labels. All signs available in a variety of sizes and materials to meet your specific needs. Custom and engraved signs are also available.

ASB-1 - Sign - 20"x14", 1/2" fiberglass for indoor/outdoor use.

ASB-2 - Label - 3 1/2"x5", vinyl coated cloth adhesive back.

ASB-3 - Barricade tape - 3"x1000", yellow with black lettering.



ASB-2

GLOVES —

8 COTTON GLOVES - 8 oz cotton glove with knit wrist



3-12 LATEX GLOVES - Flock lined Latex glove. Available in sizes 7,8,9,10



7712 - Heavy duty gloves - Liquid proof PVC glove for the tough jobs. 72/case



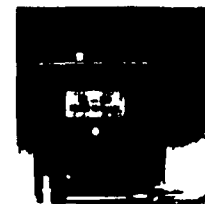
G-924 - 10" overshoe - Heavy weight vinyl overshoe. 3 position snap closure. Size 7-14



9002 - PVC overshoe - 35 gauge PVC economy overshoe. Heavy duty sole. S-XL



3360 Disposal bags - 33"x50", 6mm polyethylene with preprinted asbestos warning. 75 per roll. 48 lbs



AIR SAMPLING PUMP — SPECTREX PAS - 3000 - Features adjustable flow rate to 3 liters/minute. Provides 10-12 hours running time with battery check and automatic low charge turn off. System includes carrying case, battery charger, screwdriver, on/off key, and spare fusible resistor. Weight 2 lbs

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AAA 000293

available during the past several years support our current recommendations. The rationale for these revised recommendations was developed jointly by our staffs as part of a draft preamble to a proposed lead standard. Should there be a need to revise and reissue the lead criteria document, we would be glad to do so within a reasonable period of time.

General Policy

GAO WILL DETERMINE MOST EFFECTIVE USE OF CANCER RESEARCH RESULTS FOR AGENCIES

A study to determine how research results on the carcinogenicity of materials can be handled most effectively to meet the needs of regulatory agencies is being conducted by the General Accounting Office.

Research sponsorship and the government's coordinating activities for the screening of potential cancer-causing substances is carried out at the National Cancer Institute of the National Institutes of Health, but research is performed at many locations as implications for industrial, environmental, and other exposures are all different.

The study by GAO was initiated internally, that is, not at the specific request of Congress. Its purpose is to examine the problems in developing and recommending standards for screening possible carcinogens, and its scope includes costs, scheduling, and interagency information flow. A GAO spokesman said that in addition to the National Cancer Institute, research agencies surveyed included the National Institute for Occupational Safety and Health and the National Institute of Environmental Health Sciences. Regulatory agencies studied included the Occupational Safety and Health Administration, the Environmental Protection Agency, and the Consumer Product Safety Commission.

A draft report for agency review is in preparation, and a final report is expected to be ready in about four months, according to a GAO spokesman.

Health Hazards

NIOSH ISSUES ASBESTOS DUST ALERT FOR WORKERS EXPOSED SERVICING BRAKES

An alert concerning the potential health hazard for persons exposed to asbestos during the servicing of motor vehicle brake and clutch assemblies was issued by the National Institute for Occupational Safety and Health on August 8.

NIOSH convened a meeting of government and university scientists, industry representatives, and labor union officials to discuss the present state of knowledge with respect to this problem on June 21. Data was presented by investigators from the Mount Sinai School of Medicine in New York City indicating that workers engaged in the maintenance and repair of automobile and truck brake linings are exposed to potentially hazardous levels of airborne asbestos dust (Current Report, July 31, p. 296).

Specific brake servicing operations studied included blow-out of automobile drum brake assemblies, grinding of used truck brake linings, and bevelling of new truck brake linings. Average peak asbestos air concentrations for these three activities based on personal samples taken within 10 feet of the operator were respectively 10.5, 3.75, and 37.3 fibers greater than five microns in length per milliliter. An analysis of samples of brake drum dust revealed that almost all of the asbestos fibers were found shorter than 0.4 microns in length.

Previous Studies

Previous studies of the extent of asbestos emissions from automobile brake lining wear showed that only a very small fraction of the original asbestos content of the brake lining is found in brake drum dust. It was presumed that this is due to thermal degradation of the fibers during braking. The present findings indicate that enough asbestos is preserved to produce significant exposures during certain brake servicing procedures.

The full extent of asbestos-related disease in brake servicing personnel is not known at present because this particular occupational group has not been studied systematically up to now. However, a review of the scientific literature on the association between asbestos exposure and mesothelial tumors of the pleura and peritoneum has revealed at least four cases of these rare tumors in persons who were employed in jobs involving automobile brake servicing, the alert said.

The environmental studies of brake lining servicing together with observations of mesothelial tumors in persons so employed affirms the necessity for instituting and maintaining recommended control measures in this industry so that the health hazards of asbestos are minimized, according to the alert.

Recommended Procedures

Following are interim procedures recommended by NIOSH to minimize exposure to asbestos dust during brake and clutch servicing:

► If possible, an area shall be designated for all brake and clutch repairs. Entrances into this area shall be posted with an asbestos exposure warning sign as follows:

Asbestos
Dust Hazard
Avoid Breathing Dust
Wear Assigned Protective Equipment
Do Not Remain in Area
Unless Your Work Requires It
Breathing Asbestos Dust May Cause
Asbestosis and Cancer

► During brake servicing, an air purifying respirator, either single use or with replaceable particulate filter(s), as approved by the Mining Enforcement and Safety Administration (formerly Bureau of Mines) or NIOSH, shall be worn during all procedures starting with the removal of the wheels and including reassembly. During manual clutch servicing, such a respirator shall be worn during removal and cleaning of the clutch, pressure plate and housing assembly and during installation of the new clutch assembly.

► Dust shall first be cleaned from brake drums, brake backing plates, brake assemblies and clutch assemblies using an industrial type vacuum cleaner equipped with a high efficiency filter system (greater than 99 percent efficiency for 0.3 um diameter aerosols). After vacuum cleaning, any remaining dust shall be removed using a rag soaked in water and wrung until nearly dry. Under no circumstances shall compressed air or dry brushing be used for cleaning.

► During arcing and riveting operations, an approved respirator, as described in (2) above, shall be worn. Grinding (arcing) machines shall be provided with local exhaust ventilation such that worker exposures are maintained at least below the 1976 OSHA asbestos standard (29 CFR 1910.1001). At a minimum, the dust bag of the arcing machine shall be removed and replaced with the hose of the high efficiency industrial vacuum described in (3) above.

► Industrial vacuum cleaner bags containing asbestos dust and cloths used for wiping brake and clutch assemblies shall