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A Solutions Guide To:

- Grinding Applications
- Welding Applications
- Sanding Applications
- Materials Processing
- Laboratory Environments



Dust Control Systems

Airflow[®]
SYSTEMS INC.

Performance | Productivity | Payback

Performance. Productivity. Payback.

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Everyday that your air filtration system operates at peak efficiency, with no unnecessary maintenance, downtime, or operator involvement is another day toward improving your ROI. The question is, will your ROI ever turn to full payback? What about after payback, will your equipment ever really contribute to overall profitability?

Performance | Productivity | Payback

Airflow Systems, Inc.® products are designed to accelerate payback and contribute to operating profit with performance advantages such as welded versus bolted panel seams. Or, non-electrostatic operation for improved reliability. Airflow Systems products also help increase profitability long after they've achieved payback. Airflow Systems productivity advantages include application-specific blower wheel designs, or optional variable frequency drive blowers to reduce energy usage. With air filtration products from Airflow Systems, ROI is a given — payback is the difference.

A Network of Service and Support

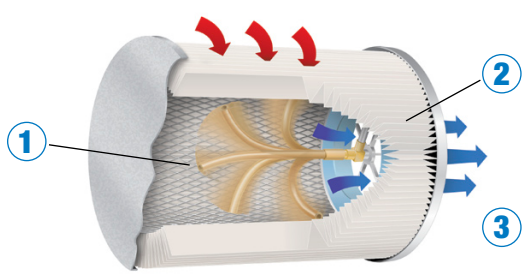
Airflow Systems has a network of over 80 distributors and dealers worldwide. Airflow Systems distributors will deliver solutions to your air filtration needs with products and systems specific to your application. This network is backed by experienced technical support engineers and a proactive customer service staff that continues to work for you after your system is installed.



Airflow Systems, Inc.® Worldwide

- United States
- Canada
- Mexico
- Argentina
- Caribbean
- Brazil
- Singapore
- Malaysia
- Thailand
- Taiwan
- China
- Philippines
- Japan
- South Korea

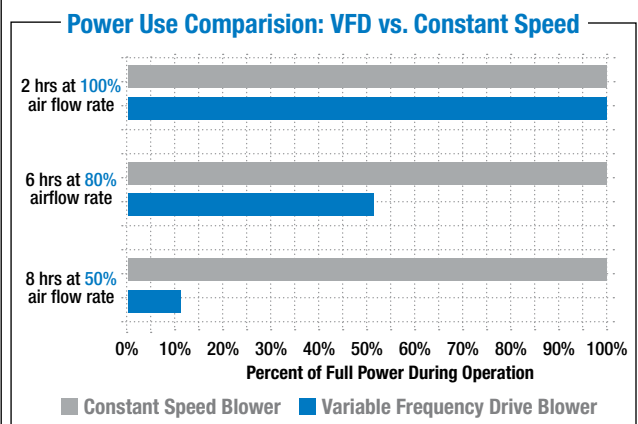
Productivity | Payback: Extend Filter Maintenance Cycles.



- 1 Vibra-Pulse® Filter Cleaning:** Combines overall filter cleaning with compressed air and a high-pressure, random-motion impactor hose that knocks dirt out from deep within the pleats. Filters return to original holding capacity.
- 2 Increased Dirt-holding Capacity:** Broad pleat openings (6 pleats per inch) reduce filter cleaning frequency by increasing collection capacity. Broad pleats also ease removal of collected contaminants during cleaning.
- 3 Reduced Filter Change-out Frequency:** Longer filter life and improved filter cleaning efficiency combine to keep filter replacement to a minimum; adding to system ROI and speeding total payback.

Performance | Payback: Reduce Energy Usage. Increase Efficiency.

Power Use Comparison: VFD vs. Constant Speed



Air Flow Rate	Constant Speed Blower (%)	Variable Frequency Drive Blower (%)
2 hrs at 100% air flow rate	100	100
6 hrs at 80% air flow rate	100	50
8 hrs at 50% air flow rate	100	10

Conventional fan drives run at a constant speed even if the required static pressure at the collection area is higher or lower than that provided by the fan. This imbalance between power needed, and power provided, is the cause of wasted energy in constant-speed fans.

Airflow Systems products integrate variable frequency drives to modulate fan speed while maintaining the required static pressure based on the fluctuating power needs of the application. Another way Airflow Systems delivers performance – with payback.

Dust Control Booth™ Collection Systems

Self-contained Collection Environments

Push-Pull Air Circulation

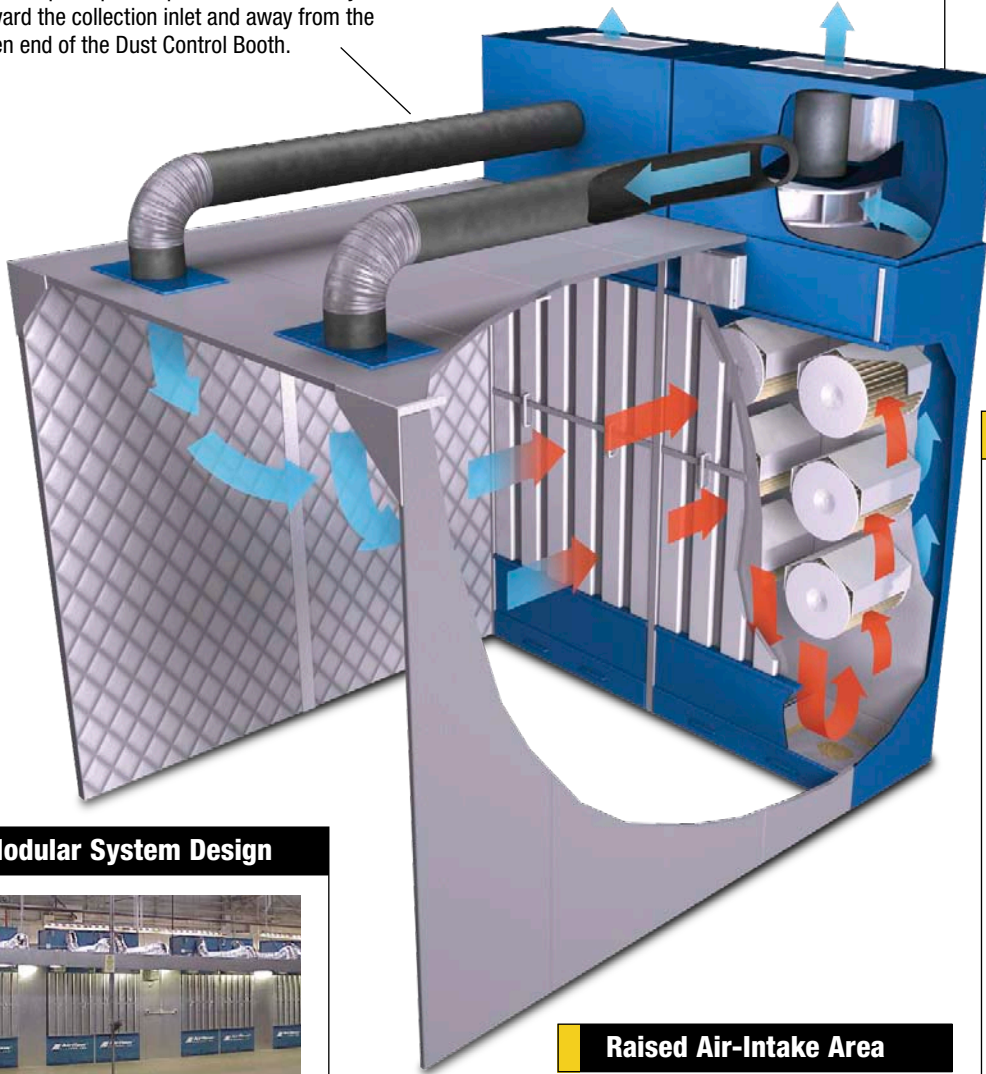
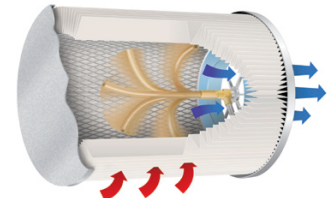
Fugitive contaminants are virtually eliminated with the addition of optional regain air ducts that create a push/pull air pattern to direct dirty air toward the collection inlet and away from the open end of the Dust Control Booth.

Direct-Drive Motor/Blowers

Eliminate drive belt replacement and reduce maintenance downtime with the use of powerful and efficient direct-drive motor/blowers.

Vibra-Pulse Filter Cleaning

- 1 Filters return to original holding capacity.
- 2 Increased dirt-holding capacity.
- 3 Reduced filter change frequency.



Panel Filter PowerBooth™



PFB-1 Module

Designed for process applications such as buffing or finishing, the PFB Series provides MERV 11 filter efficiency, 5500 CFM, and a powerful 3 HP backward-inclined blower. These and other performance advantages combine to reduce energy use and extend filter life.



Modular System Design



Dust Control Booths easily combine on-site to create a single, high-capacity, self-contained work area.

Raised Air-Intake Area

26 inches from the floor, the raised inlet focuses collection in worker breathing areas and eliminates the introduction of fugitive dirt or dust from floor level.

Dust Control Booth™ & Panel Filter PowerBooth™ Specifications

	PowerBooth™	DCB-1	DCB-2	DCB-3	DCB-4	DCB-5	DCB-6	Panel Filter Module	PFB-1	PFB-2	PFB-3	PFB-4	PFB-5	PFB-6
Air Flow (CFM)	4500	4500	9000	13500	18000	22500	27000	5500	5500	11000	16500	22000	27500	33000
Horse Power (HP)	5.0	5.0	10.0	15.0	20.0	25.0	30.0	3.0	3.0	6.0	9.0	12.0	15.0	18.0
Filtration Cartridges or Panel Filters	6	6	12	18	24	30	36	12	12	24	36	48	60	72
Dimensions H x W x D (FT)	10 x 4 x 2	8 x 6 x 8	8 x 8 x 8	8 x 12 x 8	8 x 16 x 8	8 x 20 x 8	8 x 24 x 8	9 x 4 x 2	8 x 6 x 8	8 x 8 x 8	8 x 12 x 8	8 x 16 x 8	8 x 20 x 8	8 x 24 x 8

Portable, Powerful Collection Systems

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Complete Collection, Anywhere & Everywhere

E-Z Arm® High Flow Extractors

Airflow Systems patented E-Z Arm High Flow Extractor provides powerful source collection in the toughest environments. A large, 6.75-inch diameter arm, available in 7, 10, and 14-foot lengths delivers air flow rates up to 1,500 CFM.

Source-point Collection

Collect and remove harmful contaminants directly at the source, before they migrate throughout the facility. Airflow Systems portable collection units brings high-efficiency dust, smoke, and fume collection anywhere it needs to be.

Mobility & Control

8-inch diameter, 4-spoke, molded front wheels easily roll over obstacles such as power cords, fasteners, and floor cracks without skidding. Rear-positioned, rotating casters simplify steering and improve mobility and control.

Dual-Arm Portable Collection



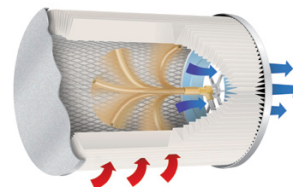
When multi-station collection is needed and a central collection system is not practical, The Airflow Systems PAC-91 self-contained collection system brings high-performance filtration to multiple work areas.

Direct-Drive Motor/Blowers

Dynamically balanced, non-sparking, and all aluminum materials ensure longer motor life and reduced motor bearing stress. Designed and built by Airflow Systems, these direct-drive motor/blowers cut maintenance and extend performance.

Vibra-Pulse Filter Cleaning

- 1 Filters return to original holding capacity.
- 2 Increased dirt-holding capacity.
- 3 Reduced filter change frequency.



Portable Unit Specifications

	PCH-1		PCH-2		PAC-91		
Air Flow (CFM)	700	800	1000	1150	1000	1000	1100
Horse Power (HP)	1.0	1.5	1.5	3.0	1.5	2.0	3.0
Weight (LBS)	254		320		389		
Sound Level (dBA)	73		78		78		

Note: PCH Series available in 304 or 316 stainless steel construction.

Downdraft Table Collection Systems

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Source Capture Efficiency, Large Work Area

Portable Downdraft Collection

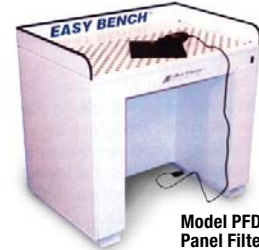


Airflow Systems portable downdraft units bring high-efficiency dust, smoke, and fume collection anywhere it needs to be. Remove harmful contaminants directly at the source, before they migrate throughout the facility.

Regain Air

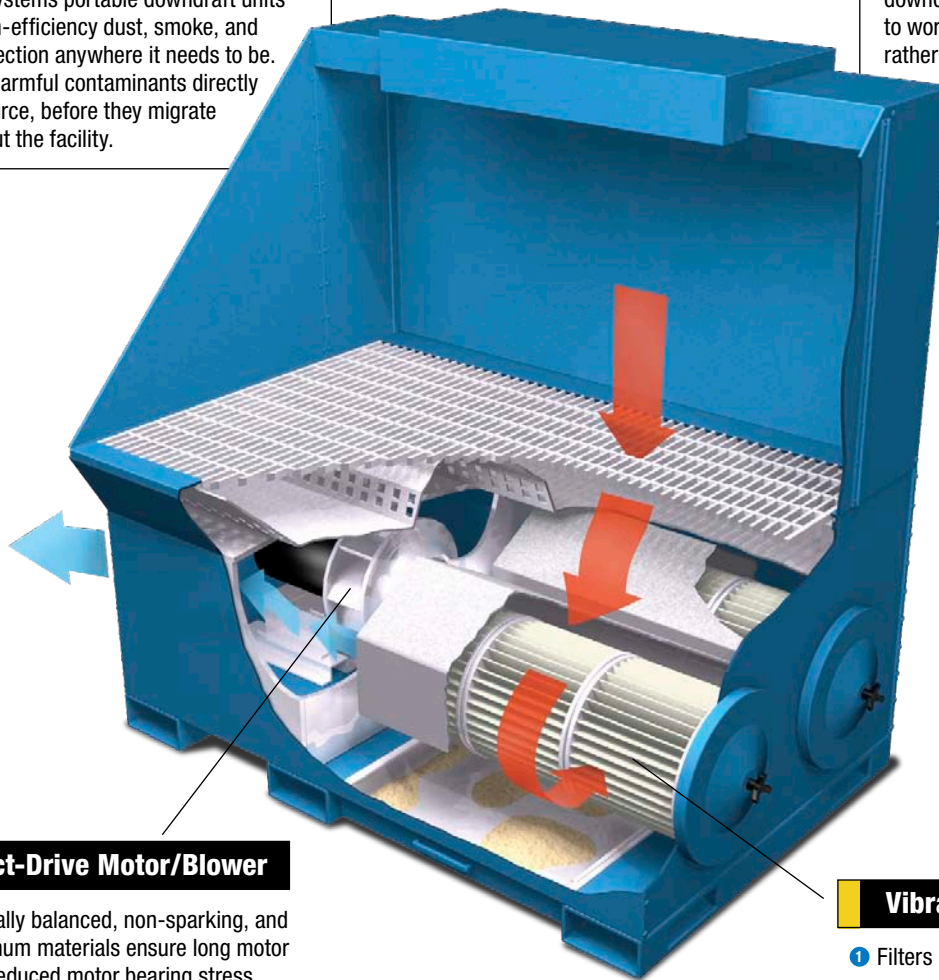
Fugitive contaminants are virtually eliminated with the addition of an optional regain air duct that creates a push/pull air pattern to direct dirty air toward the collection inlet and away from worker's breathing zone.

Desk-style Downdraft Table



Model PFDT EasyBench™
 Panel Filter Downdraft Table

The desk-style design of the EasyBench™ downdraft dust collector allows the operator to work at the downdraft area while seated, rather than standing and leaning over the downdraft area. The EasyBench delivers MERV 11 filtration efficiency at up to 1100 feet per minute downdraft velocity.



Direct-Drive Motor/Blower

Dynamically balanced, non-sparking, and all aluminum materials ensure long motor life and reduced motor bearing stress. Designed and built by Airflow Systems, these direct-drive motor/blowers cut maintenance and extend performance.

NFPA-Compliant Designs



For Aluminum Applications:
 The ALH Series and PFDT-AL downdraft collection units are designed for the processing and finishing of aluminum. The ALH Series and PFDT-AL meet NFPA 484 when properly used and maintained.

Vibra-Pulse Filter Cleaning

- 1 Filters return to original holding capacity.
- 2 Increased dirt-holding capacity.
- 3 Reduced filter change frequency.

Downdraft Table Specifications

	PFDT EasyBench™	DTH-800		DTH-1700		DT-3000V2		PFDT-AL	ALH-1		ALH-2		ALH-6	
Downdraft Velocity (FPM)	1100	122	150	122	208	202	250	1100	122	150	80	122	208	208
Horse Power (HP)	.25	1.0	1.5	1.5	3.0	3.0	5.0	.25	1.0	1.5	1.0	1.5	3.0	3.0
Table Size (W X D)	36" x 24"	32" x 24"		48" x 24"		66" x 42"		36" x 24"	32" x 24"		48" x 24"		66" x 42"	
Sound Level (dBA)	66	78		78		77		66	78		78		77	

Note: DTH Series only, available in 304 or 316 stainless steel construction.

High-Volume Central Collection Systems

High-volume, High-efficiency Collection

Facility-wide Collection



Fully self-contained units collect and filter high volumes of contaminants produced during manufacturing and processing operations. Cabinet designs are specifically constructed to reduce ductwork and installation costs. Optional variable frequency drives ensure reduced energy usage.

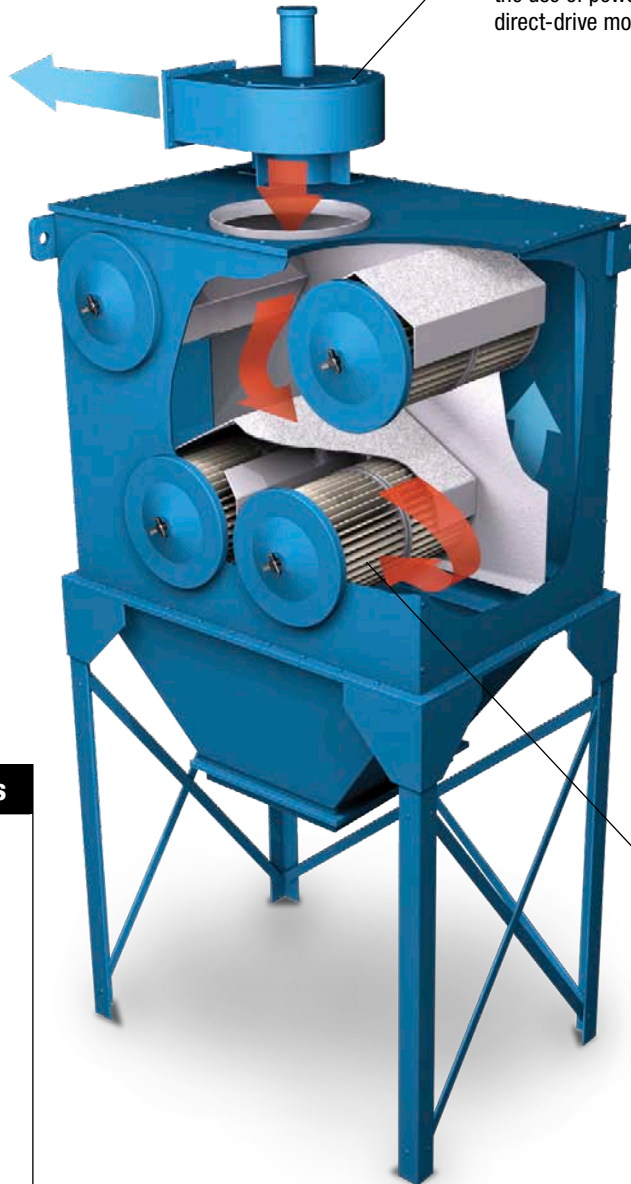
Central Collection Systems



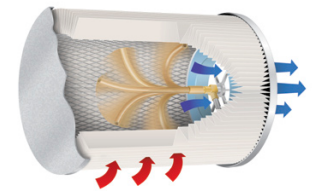
The Airflow Systems DCH Series, designed for mid-level volumes of contaminants, provides collection and filtration of manufacturing and processing dust, smoke, and other dry pollutants; up to 1,200 CFM.

Direct-Drive Motor Blower

Eliminate drive belt replacement and reduce maintenance downtime with the use of powerful and efficient direct-drive motor/blowers.



Vibra-Pulse Filter Cleaning



- 1 Filters return to original holding capacity.
- 2 Increased dirt-holding capacity.
- 3 Reduced filter change frequency.

In-Use Filter Cleaning

A proprietary auto-blocking system protects the clean side of the air path from contaminants. The Vibra-Pulse filter cleaning process can then take place during operation.

DC/DCH Series Specifications

	DCH-1	DCH-2	DC-4	DC-6	DC-8	DC-12	DC-18
Air Flow (CFM)	600 - 800	900 - 1200	600 - 1950	950 - 3450	950 - 5500	1700 - 6800	3075 - 6800
Horse power (HP)	1.0 - 1.5	1.0 - 3.0	3.0 - 5.0	3.0 - 7.5 BI	3.0 - 10.0 BI	5.0 BI - 10.0 HF	5.0 BI - 10.0 HF
Filtration Cartridges	2	2	4	6	8	12	18
Weight (LB)	200	260	585	783	1480	1750	1750
Sound Level (dBA)	71 - 74	77 - 79	90 - 95	90 - 84	84 - 95	84 - 90	84 - 95

Other Airflow Systems Dust Collection Products

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E-Z Arm® High Flow Extractor Arms



E-Z Arm High Flow Extractors efficiently collect dust, smoke, fumes and other pollutants at their source.

- Friction release pawl-and-sprocket design engages positively when positioned, yet offers no resistance when moved.
- Large, 13" diameter inlet hood offers 160° movement; 360° flange handle allows easier hood positioning than single-handle designs.
- Rounded duct constructed of 20 gauge aluminum—durable, yet lightweight.
- Hi-Flow hose spiral-wire reinforced for strength and flexibility; resists weld sparks and grinding embers.

Summary Specifications

Model	Air Flow (CFM)
E-Z Arm®	600/1500
E-Z Arm® II	200/600
E-Z Arm® Stainless Steel	600/1500
E-Z Arm® II Stainless Steel	200/600
E-Z Arm® 2.5	72/250

High-Vacuum Collection Systems



V Series collectors provide simultaneous, high-powered source capture to multiple, remote work stations.

- Vibra-Pulse® self-cleaning system cleans filters inside unit, extending filter life and minimizing maintenance.
- HEPA after-filter provides 99.97% collection efficiency.
- Continuous-duty blower for high reliability and long life.
- Non-electrostatic operation for high reliability, low maintenance.
- Low noise level, reduces worker irritation and increases productivity.

Summary Specifications

Model	Air Flow (CFM)	Horse Power (HP)
V1	200	1
V2	145/190	2 or 3
V410	280/510	5 or 10

Ambient Free-Hanging Collection Systems



Ambient collection systems continuously recirculate, and filter air to remove airborne contaminants where source capture is not practical.

- Low maintenance filters—can be replaced or cleaned when dirty; no tools needed for filter maintenance.
- Totally enclosed direct-drive motor-blower unit ensures quiet operation and long life.
- 4-way airfoil grille provides easy, precise air flow adjustment.
- Large main filters provide 98% filtration efficiency.
- Non-electrostatic operation for maximum reliability.
- Available with self-cleaning cartridges for heavy-duty applications (Model TC-4).

Summary Specifications

Model	Air Flow (CFM)	Horse Power (HP)
F70R	1400/2500	.75
F70C	1400/2100	.50
T140	3500/4500	2 or 3
TC-4	3600/4500	3
F90	1600/2800	1.5
F120	2000/3800	2
F240	4000/6000	5

Common Contaminant Permissible Exposure Limits (PELs)		
Contaminants		(PELs) mg/m ³ (a) (1)
Aluminum metal (as Al)	Total dust	15
	Respirable fraction	5
Arsenic, inorganic compounds (as As)		10 µg/m ³ [see standard no. 1910.1018(b)]
Beryllium and beryllium compounds (as Be)		2 µg/m ³ [see standard no. 1910.1000 Table Z-2]
Bismuth telluride, undoped	Total dust	15
	Respirable fraction	5
Bromine		0.7
Calcium carbonate	Total dust	15
	Respirable fraction	5
Calcium oxide		5
Calcium silicate	Total dust	15
	Respirable fraction	5
Carbon black		3.5
Cellulose	Total dust	15
	Respirable fraction	5
Chromium (II) compounds (as Cr)		0.5
Chromium (VI) [hexavalent chromium]		5 µg/m ³ [see standard no. 1910.1026 (b)]
Cobalt metal, dust, and fume (as Co)		0.1
Copper	Fume (as CU)	0.1
	Dusts & mists (as CU)	1
Graphite, natural respirable dust		15 mppcf (c) [see standard no. 1910.1000 Table Z-3]
Graphite, synthetic	Total dust	15
	Respirable fraction	5
Gypsum	Total dust	15
	Respirable fraction	5
Kaolin		15
Lead inorganic (as Pb)	Total dust	5
	Respirable fraction	5
Lithium hydride		0.025
Magnesite	Total dust	15
	Respirable fraction	5
Magnesium oxide fume		15
Manganese fume (as Mn)		(C) 5
Molybdenum (as Mo)	Soluble compounds	5
	Insoluble, Total dust	15
Nickel, metal and insoluble compounds (as Ni)		1
Nickel, soluble compounds (as Ni)		1
Oil mist, mineral		5
Particulates not otherwise regulated (PNOR) (b)	Total dust	5 [see standard no. 1910.1000 Table Z-3]
	Respirable fraction	15 [see standard no. 1910.1000 Table Z-3]
Plaster of paris	Total dust	15
	Respirable fraction	5
Platinum (as Pt)		0.002
Portland cement	Total dust	15
	Respirable fraction	5
Rhodium (as Rh), metal fume and insoluble compounds		0.1
Rouge	Total dust	15
	Respirable fraction	5
Selenium Compounds (as Se)		0.2
Silica, amorphous, precipitated and gel		20 mppcf (c) [see standard no. 1910.1000 Table Z-3]
Silicates (less than 1% crystalline silica) Mica		20 mppcf (c) [see standard no. 1910.1000 Table Z-3]
Silicon	Total dust	15
	Respirable fraction	5
Silicon carbide	Total dust	15
	Respirable fraction	5
Silver, metal and soluble compounds (as Ag)		0.01
Starch	Total dust	15
	Respirable fraction	5
Sucrose		15
Tantalum, metal and oxide dust	Total dust	5
	Respirable fraction	5
Tellurium and compounds (as Te)		0.1
Tin, inorganic compounds (except oxides) (as Sn)		2
Tin, organic compounds (as Sn)		0.1
Titanium dioxide	Total dust	15
	Soluble Compounds	0.05
Uranium (as U)	Insoluble Compounds	0.25
	Respirable dust as V2O5	(C) 0.5
Vanadium	Fume as V2O5	(C) 0.1
	Total dust	15
Vegetable oil mist		5
Zinc chloride fume		1
Zinc oxide fume		5
Zinc oxide	Total dust	15
	Respirable fraction	5
Zinc stearate	Total dust	15
	Respirable fraction	5

Footnotes:

- (1) The PELs are 8-hour TWAs (Time-Weighted Average limits) unless otherwise noted; a (C) designation denotes a ceiling limit. They are to be determined from breathing zone air samples.
- (a) Milligrams of substance per cubic meter of air.
- (b) All inert of nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by this limit, which is the same as the Particles Not Otherwise Regulated (PNOR) limit in 1910.1000 Table Z-1.
- (c) Millions of particles per cubic foot of air, based on impinger samples counted by light-field techniques.

Source:

The United States. Occupational Safety and Health Administration. U.S. Department of Labor. Table Z-1 Limits for Air Contaminants - 1910.1000 Table Z-1. 28 Feb. 2006. 7 July 2006 <<http://www.osha.gov>>.



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11221 Pagemill Road • Dallas, TX 75243-8306 USA
 Phone: 214-503-8008 • Fax: 214-503-9596

1-800-818-6185