Table 1 - Entrance Criteria for Chemicals, Dusts and Physical Agents

Exposure of Concern is:	Acrylonitrile	Arsenic (Inorganic)	Asbestos	Benzene
Employees are enrolled if:	They are exposed ≥ the Action Level without regard for the use of respirators	They are exposed above the Action Level, without regard for the use of respirators, at least 30 days per year[(a)]	They are exposed above Permissible Exposure Limits	They are exposed ≥ the Action Level for 30 days per year or above the Permissible Exposure Limit for 10 days per year [(a)]
Occupations Where Exposures May Occur:	Manufacture of acrylic and modiacrylic fibers, acrylic plastics and resins, specialty polymers, nitrile rubbers, and other organic chemicals. Application as a fumigant.	Use/manufacture of pesticides, rodenticides, or wood preser-vatives. Certain soldering operations. Can be formed by roasting or smelting of sulfide minerals.	Remove or repair of asbestos materials including: cement, plaster, fire proofing, insulation, floor tile, floor tile glue, pipe, pipe insulation, brake and clutch linings, pipe and boiler insulation materials.	Laboratory operations. Use or application of gasoline or certain lacquer solvents and paint removers.
Pre-placement exam	Yes	Yes	Yes	Yes
Periodic exam	Yes	Yes	Yes	Yes
Emergency/ exposure examination and tests	Yes	Yes	No	Yes
Termination exam	Yes -- if no exam within 6 months of termination	Yes -- if no exam within 6 months of termination	Yes -- within ± 30 days of termination	No
Work and medical history	Yes	Yes	Yes	Yes
Chest x-ray	Yes	Yes	Yes[b]	No
Pulmonary function test	No – unless needed for use of respirators	No – unless needed for use of respirators	Yes	Yes
Evaluation of ability to wear a respirator	Yes	Yes	Yes	Yes – if respirators are used
Employee counseling	Yes – by physician	Yes – by physician	Yes – by physician	Yes – by physician
Medical removal plan	No	No	No	Yes

[(a)] Other requirements may apply. Please contact EHS for further information.
[(b)] Frequency varies

Table 1 - Entrance Criteria for Chemicals, Dusts and Physical Agents (cont.)

Exposure of Concern is:	1, 3-Butadiene	Cadmium	Carcinogens [a]	Chromium (VI)
Employees are enrolled if:	They are exposed ≥ the Action Level for 30 days per year or above the Permissible Exposure Limit for 10 days per year	They are exposed ≥ the Action Level for 30 days per year	They work in a location where covered materials (see footnote a, below) are handled, used or stored	They are exposed ≥ the Action Level for 30 days per year, or are experiencing signs or symptoms of exposure
Occupations Where Exposures May Occur:	Production of styrene-butadiene rubber and polybutadiene rubber, copolymer latexes, resins and polymers, and in the production of such chemicals as fungicides	Ore smelting operations, mist from cadmium-containing electroplating baths, drying of cadmium pigments, machining of cadmium coated or containing materials.	Any operation using the materials listed in footnote (a), below.	Chromate production, use of chromate pigment and chrome electroplating. Welding of stainless steel. Tanning of hides using Chromium (VI).
Pre-placement exam	Yes	Yes	Yes	Within 30 days of initial assignment
Periodic exam	Yes	Yes	Yes	Yes
Emergency/ exposure examination and tests	Yes -- within 48 hours of exposure	Yes	Yes -- special medical surveillance begins within 24 hours	Yes
Termination exam	Yes -- if 12 months have elapsed since last exam	Yes	No	Yes, unless last exam was within 6 months
Work and medical history	Yes	Yes	Yes	Yes
Chest x-ray	No	Yes	No	No
Pulmonary function test	No – unless needed for use of respirators	Yes	No – unless needed for use of respirators	As determined by the physician
Evaluation of ability to wear a respirator	Yes -- if respirators are used	Yes	Yes -- if respirators are used	Yes -- if respirators are used
Employee counseling	Yes -- -- contact EHS for details	Yes -- contact EHS for details	No	Yes
Medical removal plan	No	Yes	No	No

[a] Covered carcinogens include: 4-Nitrobiphenyl, alpha-Naphthylamine, methyl chloromethyl ether, 3,3'-Dichlorobenzidine (and its salts), bis-Chloromethyl ether, beta-Naphthylamine, Benzidine, 4-Aminodiphenyl, Ethyleneimine, beta-Propiolactone, 2-Acetylaminofluorene, 4-Dimethylaminoazo-benzene, and N-Nitrosodimethylamine. Certain exemptions apply. Please contact EHS for further information.

Table 1 - Entrance Criteria for Chemicals, Dusts and Physical Agents (cont.)

Exposure of Concern is:	1,2-Dibromo-3-chloropropane	Ethylene Oxide	Formaldehyde	Hazardous Waste Operations
Employees are enrolled if:	They are exposed above the Permissible Exposure Limit	They are exposed ≥ the Action Level for 30 days per year	They are exposed ≥ the Action Level or Short Term Exposure Limit, or develop sign or symptoms of exposure[(a)]	Hazardous materials emergency response or waste management personnel; covered employees who develop signs of symptoms of exposure or who have a known exposure to a covered hazard [(a)]
Occupations Where Exposures May Occur:	Application as a soil fumigant or use outside of a laboratory fume hood.	Manufacture of ethylene glycol, surfactants, ethanolamines, glycol ethers, and other organic chemicals outside of a laboratory fume hood. Used as a sterilant and fumigant.	Embalming or preserving of biological specimens. Used in certain manufacturing operations. Used in textile manufacturing.	Non-laboratory scale chemical spill response. Employees involved in chemical bulking operations outside of a chemical fume hood.
Pre-placement exam	Yes	Yes	Yes	Yes
Periodic exam	Yes	Yes -- annual	Yes -- annual	Yes -- annually or at physician's discretion[1]
Emergency/ exposure examination and tests	Yes -- male reproductive; repeat in 3 months	Yes	Yes	Yes
Termination exam	No	Yes	Yes	Yes -- if no exam within 6 months of termination
Work and medical history	Yes	Yes	Yes	Yes
Chest x-ray	No	No	No	No -- unless determined by physician
Pulmonary function test	No – unless needed for use of respirators	No – unless needed for use of respirators	No – unless needed for use of respirators	No -- unless determined by physician
Evaluation of ability to wear a respirator	Yes	Yes	Yes	Yes
Employee counseling	Yes -- by physician	Yes -- by physician	Yes -- by physician	Yes -- by physician
Medical removal plan	No	No	No	No

[(a)] Other requirements may apply. Please contact EHS for further information.

Table 1 - Entrance Criteria for Chemicals, Dusts and Physical Agents (cont.)

Exposure of Concern is:	Laboratory Exposure to Chemicals	Lasers (Non-Ionizing Radiation)	Lead	Methylenedi-aniline (MDA)
Employees are enrolled if:	An employee develops signs or symptoms associated with a chemical used in a laboratory, or exposure is above permissible limits for a chemical where surveillance is required	They routinely use Class 3b, 3r or Class 4 lasers	They are exposed ≥ the Action Level for 30 days per year	They are exposed ≥ the Action Level for 30 days per year or have dermal contact ≥ 15 days per year
Occupations Where Exposures May Occur:	Operations where chemicals found on this table are used outside of a fume hood or other control.	Research operations using covered laser systems.	Metal smelting, casting, refining. Soldering and welding. Remove or apply lead paint or products.	See footnote (b) below.
Pre-placement exam	No	Yes	Yes	Yes
Periodic exam	No – unless directed by the physician	No	Yes -- annually or at physician's discretion	Yes -- annual
Emergency/ exposure examination and tests	Yes, at physician's discretion unless employee reports signs/symptoms of exposure	Yes	Yes	Yes
Termination exam	No	No	Yes -- if no exam within 6 months of termination	No
Work and medical history	Yes, if directed by the physician	Medical History [(a)]	Yes	Yes
Chest x-ray	Yes, if directed by the physician	No	No -- unless directed by the physician	No
Pulmonary function test	Yes, if directed by the physician	No – unless needed for use of respirators	Yes, if directed by the physician	No – unless needed for use of respirators
Evaluation of ability to wear a respirator	No	No	Yes	Yes
Employee counseling	Yes, if employee reports signs or symptoms	No	Yes -- by physician	Yes -- by physician
Medical removal plan	No	No	No	Yes

[(a)] Those working with UV lasers or who have a history of photo-sensitivity will be provided with a skin examination. Current/past medication will be reviewed, particularly use of photo-sensitizing drugs. Tests may include ocular history, visual acuity, Amsler Grid test, and color vision test.

[(b)] Manufacture of 4,4' Methylene-diphenyl diisocyanate; as a precursor in the manufacture of plastic fibers, antioxidants, dyestuff intermediates, corrosion preventatives, special polymers. Purified MDA: manufacturing epoxy resin curing agents, wire coating applications, polyurethane co-reactants, pigments/dyes, and defense applications.

Table 1 - Entrance Criteria for Chemicals, Dusts and Physical Agents (cont.)

Exposure of Concern is:	Methylene Chloride	Noise	Respiratory Protection	Silica	Vinyl Chloride
Employees are enrolled if:	See footnote (a), below. [a]	The exceed an 8-hour time weighted average of 85 decibels	They wear a respirator of any type except disposable dust masks	They are exposed above Permissible Limits	Exposed ≥ the action level without regard for the use of respirators
Occupations Where Exposures May Occur:	Paint stripping, polyurethane foam manufacturing, cleaning/ degreasing	Construction, shops, vehicle work areas, maintenance operations, mechanical shops or research	Any situation where employee exposures are not adequately controlled by other means	Grinding, cutting or sanding of concrete, masonry, stone; abrasive blasting.	Manufacture of poly vinyl chloride.
Pre-placement exam	Yes	Audiometric testing required within 6 months of first exposure	Yes – prior to use of respirator	Yes	Yes
Periodic exam	Yes	No physical exam but audiometric testing required	Yes – annual	Yes	Yes
Emergency/ exposure examination and tests	Yes	No	Yes [b]	No	Yes
Termination exam	Yes -- if no exam within 6 months of termination	Only audiometric testing required	No	No	No
Work and medical history	Yes	No	Yes	Yes	Yes
Chest x-ray	No	No	As determined by physician	Yes	No
Pulmonary function test	As determined by physician	No	As determined by physician	Yes	No – unless needed for use of respirators
Evaluation of ability to wear a respirator	Yes -- by physician	No	Yes	Yes	Yes
Employee counseling	Yes	Yes[c]	Yes -- by physician	Yes -- by physician	No
Medical removal plan		No[d]	No	No	Yes

[a] Exposed ≥ the action level for 30 days/year, ≥ Permissible Exposure Limit or Short Term Exposure Limit for 10 days/year. Above the 8-TWA PEL or STEL for any time period where an employee has been identified by a physician or other licensed health care professional as being at risk from cardiac disease or from some other serious MC-related health condition and such employee requests inclusion in the medical surveillance program;
[b] If the employee reports medical signs or symptoms related to respirator use.
[c] Retest, retraining and refitting may be offered if a standard threshold shift has occurred.
[d] Employees in 'hearing critical' jobs may require special consideration. Please contact EHS.

Table 2 - Entrance Criteria for Other Agents

Exposure of Concern is:	Animal Handlers	Bloodborne Pathogens	Infectious Agents, Select Agents and Toxins	Tier 1 Select Agents and Toxins	International Travel for Research
Employees are enrolled if:	They work with animals that may carry zoonotic diseases, that have been intentionally infected with zoonotic organisms, or that represent a serious risk for animal-related allergies.	They work with or are potentially exposed to unfixed blood, tissue or bodily fluids of human origin	They work with organisms or agents that can cause disease in humans including all non-Tier 1 Select Agents and Toxins as defined by HHS and USDA.	They work with organisms or agents that are classified as Tier 1 Select Agents or Toxins by HHS or USDA.	They will perform Virginia Tech research outside of the United States.
Pre-placement exam	A medical survey is used to determine the hazards of risk exposure. Medical services are determined based on this review.	No physical exam	A medical survey is used to determine the hazards of risk exposure. Medical services are determined based on this review. Immunizations and/or titers are offered to at-risk employees if available for the exposure.	Pre-exposure titer, medical history, respirator fit testing, and physical exam..	A medical survey is used to determine the hazards of risk exposure. Medical services (including travel vaccinations) are determined based on this review.
Periodic exam	The medical survey is updated periodically, or when there are changes in your work, hazard exposures or health status. Medical services are determined based on this review.	No	The medical survey is updated annually. Medical services are determined based on this review. The schedule for certain services, such as vaccinations and titters, varies.	Services as above plus annual titer.	The medical survey is updated when there are changes in your work location, hazard exposures or your health status.
Emergency/ exposure examination and tests	Yes, if exposure to a zoonotic organism occurs, or employee develops animal-related allergies or signs or symptoms of potential disease exposure.	Yes – contact EHS for guidance if an exposure of concern occurs.	Yes, if exposure to an infectious agent occurs, or if the employee develops signs or symptoms of potential disease exposure. As determined by the physician. Contact EHS for guidance.	Yes, as for Infectious Agents, Select Agents and Toxins.	Yes – contact EHS for guidance if an exposure of concern occurs to coordinate services internationally.
Termination exam	If applicable, employees should receive an appropriate titer prior to leaving employment.	No	If applicable, employees should receive an appropriate titer prior to leaving employment.	Yes, as for Infectious Agents, Select Agents and Toxins.	If applicable, employees should receive an appropriate titer prior to leaving employment.
Work/ medical history	Yes	No	Yes	Yes	Yes
Chest x-ray	As determined by physician	No	As determined by physician	As determined by physician	As determined by physician
Pulmonary function test	As determined by physician	No	As determined by physician	As determined by physician	As determined by physician
Employee counseling	Yes -- if an exposure of concern occurs, the employee develops animal-related allergies, or develops signs or symptoms of a potential work-related illness.	Yes -- if an exposure of concern occurs	Yes -- if an exposure of concern occurs, employee develops signs/symptoms of a potential work-related illness, employee becomes immunocompromised or employee is considering conception and the exposure represents a risk to the fetus[a]	Yes, as for Infectious Agents, Select Agents and Toxins.	Yes -- if an exposure of concern occurs, the employee develops animal-related allergies, or develops signs or symptoms of a potential work-related illness.
Medical removal plan	No, however, see Medical Reassignment section.	No	No, however, see Medical Reassignment section.	As determined by physician	No, however, see Medical Reassignment section.

Please contact EHS for guidance if this is an issue of concern.