**Hazardous chemicals requiring health monitoring**

## The information in this guidance is taken from regulation 436 (asbestos) and Schedule 14 to the WHS Regulations.

## Hazardous chemicals requiring health monitoring under the WHS Regulations and their type of health monitoring

| Hazardous chemical | Type of health monitoring |
| --- | --- |
| Acrylonitrile | Demographic, medical and occupational history  Records of personal exposure  Physical examination |
| Arsenic (inorganic) | Demographic, medical and occupational history  Records of personal exposure  Physical examination with emphasis on the peripheral nervous system and skin  Urinary inorganic arsenic |
| Asbestos | Demographic, medical and occupational history  Records of personal exposure  Physical examination |
| Benzene | Demographic, medical and occupational history  Records of personal exposure  Physical examination  Baseline blood sample for haematological profile |
| Cadmium | Demographic, medical and occupational history  Records of personal exposure  Physical examination with emphasis on the respiratory system  Standard respiratory questionnaire to be completed  Standard respiratory function tests including, for example, FEV1, FVC and FEV1/FVC  Urinary cadmium and β2-microglobulin  Health advice including counselling on the effect of smoking on cadmium exposure |
| Chromium (inorganic) | Demographic, medical and occupational history  Physical examination with emphasis on the respiratory system and skin  Weekly skin inspection of hands and forearms by a competent person |
| Creosote | Demographic, medical and occupational history  Health advice including recognising photosensitivity and skin changes  Physical examination with emphasis on the neurological system and skin, noting abnormal lesions and evidence of skin sensitisation  Records of personal exposure including photosensitivity |
| Isocyanates | Demographic, medical and occupational history  Completing a standardised respiratory questionnaire  Physical examination of the respiratory system and skin  Standardised respiratory function tests, FEV1, FVC and FEV1/FVC |
| Lead (inorganic) | Demographic, medical and occupational history  Physical examination  Biological monitoring (blood lead level) |
| Mercury (inorganic) | Demographic, medical and occupational history  Physical examination with emphasis on dermatological, gastrointestinal, neurological and renal systems  Urinary inorganic mercury |
| 4,4’-Methylene bis(2-chloroaniline) (MOCA) | Demographic, medical and occupational history  Physical examination  Urinary total MOCA  Dipstick analysis of urine for haematuria  Urine cytology |
| Organophosphate pesticides | Demographic, medical and occupational history including pattern of use  Physical examination  Baseline estimation of red cell and plasma cholinesterase activity levels by the Ellman or equivalent method  Estimating red cell and plasma cholinesterase activity towards the end of the working day on which organophosphate pesticides have been used |
| Pentachlorophenol (PCP) | Demographic, medical and occupational history  Records of personal exposure  Physical examination with emphasis on the skin, noting abnormal lesions or effects of irritancy  Urinary total pentachlorophenol  Dipstick urinalysis for haematuria and proteinuria |
| Polycyclic aromatic hydrocarbons (PAH) | Demographic, medical and occupational history  Physical examination  Records of personal exposure including photosensitivity  Health advice including recognising photosensitivity and skin changes |
| Silica, crystalline | Demographic, medical and occupational history  Records of personal exposure  Standardised respiratory questionnaire to be completed  Standardised respiratory function test, for example, FEV1, FVC and FEV1/FVC  Chest X-Ray full PA view |
| Thallium | Demographic, medical and occupational history  Physical examination  Urinary thallium |
| Vinyl chloride | Demographic, medical and occupational history  Physical examination  Records of personal exposure |

## Examples of chemicals to consider for health monitoring

You may wish to consider the following examples of hazardous chemicals and their testing methods, which are not listed in Schedule 14 to the model WHS Regulations, when implementing a health monitoring program for your workers.

## Some hazardous chemicals to consider for health monitoring and their type of health monitoring

| Hazardous chemical | Type of health monitoring |
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| 1. Antimony | Demographic, medical and occupational history  Records of personal exposure  Physical examination with emphasis on the respiratory system and skin  Urinary antimony level |
| Arsenic (inorganic) | Extra:  Urinary inorganic arsenic by speciation (inorganic arsenic plus methylated metabolites) |
| Benzene | Extra:  Urinary S-phenylmercapturic acid (s-PMA) |
| Beryllium | Demographic, medical and occupational history  Records of personal exposure  Physical examination with emphasis on respiratory and dermatological systems  Urinary beryllium level |
| Butanone (methyl ethyl ketone, MEK) | Demographic, medical and occupational history  Physical examination with emphasis on the central nervous system and skin  Urinary MEK (2-butanone) level |
| Carbon disulfide | Demographic, medical and occupational history  Physical examination with emphasis on the respiratory system and skin  Urinary 2-thiothiazolidine-4-carboxylic acid level |
| Chromium (inorganic) | Extra: Urinary chromium |
| Cobalt | Demographic, medical and occupational history  Physical examination with emphasis on respiratory systems and skin  Urinary cobalt level |
| Creosote | Extra: Urinary 1-hydroxypyrene |
| Cyclophosphamide | Demographic, medical and occupational history  Urinary cyclophosphamide level |
| Dichloromethane | Collecting demographic, medical and occupational history  Physical examination with emphasis on the central nervous system  Urinary dichloromethane |
| Ethyl benzene | Demographic, medical and occupational history  Records of personal exposure  Physical examination  Baseline blood sample for haematological profile  Urinary mandelic acid level |
| Fluorides (including soluble fluorides and aluminium fluoride) | Demographic, medical and occupational history  Physical examination with emphasis on the respiratory system  Pre and post shift urinary fluoride level |
| Isocyanates | Extra: Urinary isocyanate metabolites |
| 4-methylpentan-2-one (methyl isobutyl ketone) MIBK | Demographic, medical and occupational history  Physical examination with emphasis on the respiratory system and skin  Urinary MIBK level |
| Nickel | Demographic, medical and occupational history  Physical examination with emphasis on dermatological and respiratory systems  Urinary nickel level |
| Organophosphate pesticides | Extra: Urinary organophosphate metabolites |
| Polycyclic aromatic hydrocarbons (PAH) | Extra: Urinary 1-hydroxypyrene |
| Styrene | Demographic, medical and occupational history  Records of personal exposure  Physical examination  Baseline blood sample for haematological profile  Urinary mandelic acid |
| Tetrachloroethylene (perchloroethylene) | Demographic, medical and occupational history  Physical examination with emphasis on the central nervous, respiratory and reproductive systems and skin  Tetrachloroethylene blood level before shift |
| Toluene | Demographic, medical and occupational history  Records of personal exposure  Physical examination  Baseline blood sample for haematological profile  Urinary o-cresol |
| Trichloroethylene | Demographic, medical and occupational history  Physical examination with emphasis on the central nervous system  Urinary trichloroacetic acid or trichloroethane level |
| Vinyl chloride | Extra: Annual liver function tests (AST, ALT, GGT, ALP, and bilirubin) |
| Uranium | Demographic, medical and occupational history  Physical examination  Post shift urinary uranium level  Urinary dipstick analysis for proteinuria  Urinary cytology |
| Xylene | Demographic, medical and occupational history  Records of personal exposure  Physical examination  Baseline blood sample for haematological profile  Urinary toluric acid |