### Hazardous Substances

**Industrial Toxins and Chemicals – Toxic substances that can cause lung diseases**

<table>
<thead>
<tr>
<th>Toxin</th>
<th>Common industrial diseases it can cause</th>
<th>Occupations/Industries at risk</th>
<th>Acute health effects</th>
<th>Chronic health effects</th>
</tr>
</thead>
</table>
| Asbestos      | • Asbestosis  
• Mesothelioma  
• Pleural Plaques  
• Pleural Thickening | • Mining  
• Construction  
• Shipbuilding  
• Manufacturing of asbestos-containing materials  
• Carpenters  
• Painters  
• Railway industry workers  
• Electricians  
• Plumbers and gas fitters  
• Public building workers  
• Roofers  
• Steel workers  
• Vehicle body workers  
• Transport/haulage workers | • Cough  
• Shortness of breath, wheezing or hoarseness  
• Shoulder pain  
• Unexplained weight loss  
• Chest pain  
• Depression, mood changes | • Fibrosis – the formation of too many fibrous tissues  
• Pleural calcification – hardening of the membrane covering the surface of the lung  
• Lung cancer – tumor cells growing in the lung  
• Pleural Mesothelioma – Cancer contained in the lining of the lungs |
| Aluminium dust | • Aluminosis| • Manufacture of aluminium products  
• Fireworks  
• Ceramics  
• Paints  
• Electrical goods  
• Abrasives | • Cough  
• Shortness of breath | • Interstitial fibrosis – when the part of the lungs surrounding the air sacs become scarred and cause excessive fibrous tissues to be produced |
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| Aluminium Abrasives   | • Shaver's disease – progressive lung disorder  
• Corundum Smelter's lung  
• Bauxite lung  | • Manufacture of abrasives smelting                                                                     | • Alveolar edema – build up of fluid in the alveoli                                   | • Interstitial fibrosis - when the part of the lungs surrounding the air sacs become scarred and cause excessive fibrous tissues to be produced  
• Emphysema – the loss of elasticity of the lung tissue resulting in the small airways collapsing during exhalation and air becoming trapped in the lungs |
| Ammonia               | • Pneumoconiosis – build up of large amounts of dust in the lungs causing a tissue reaction            | • Ammonia products  
• Manufacture of fertilizers  
• Chemical productions  
• Explosives                                                                 | • Upper and lower respiratory tract irritation eg cough, phlegm, chest tightness and shortness of breath  
• Edema – abnormal accumulation of fluid beneath the skin or in one or more of the cavities in the body  
• Edema – abnormal accumulation of fluid beneath the skin or in one or more of the cavities in the body | • Chronic bronchitis – inflammation of the medium-sized airways in the lungs caused by prolonged irritation |
| Arsenic               |                                                                                                         | Manufacture of  
• Pesticides  
• Pigments  
• Glass  
• Alloys                                                                 | • Bronchitis eg cough, wheezing, difficulty breathing, and a blocked/runny nose  
• Laryngitis eg hoarse voice or complete loss of voice due to irritation of the vocal cords lasting a few days  
• Laryngitis eg hoarse voice or complete loss of voice due to irritation of the vocal cords lasting a few days | • Lung cancer - tumor cells growing in the lung  
• Bronchitis - inflammation of air passages in the lungs  
• Laryngitis – inflammation of the larynx lasting over 3 weeks |
| Beryllium             | • Berylliosis  
• Chronic Beryllium Disease (CBD)  | • Ore extraction  
• Manufacture of  
• Alloys  
• Ceramics                                                                 | • Severe pulmonary edema  
• Pneumonia                                                                 | • Fibrosis - the formation of too many fibrous tissues  
• Progressive dyspnea – severe shortness of breath |
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<tr>
<td>Beryllium continued</td>
<td></td>
<td></td>
<td>• Interstitial granulomatosis – formation of a ball-like collection of immune cells in the alveolar, bronchial and vascular walls</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• Lung cancer - tumor cells growing in the lung</td>
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<td></td>
<td></td>
<td></td>
<td>• Cor pulmonale (pulmonary heart disease) - tissue damage causing a change in structure and function of the right ventricle of the heart</td>
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<tr>
<td>Cadmium Oxide</td>
<td>• Welding</td>
<td>• Manufacture of electrical equipment</td>
<td>• Cough</td>
<td>• Emphysema – the loss of elasticity of the lung tissue resulting in the small airways collapsing during exhalation and air becoming trapped in the lungs</td>
</tr>
<tr>
<td></td>
<td>• Manufacture of alloys</td>
<td>• Pneumonia</td>
<td>• Hyperplasia (build up of extra cells) and metaplasia (abnormal cell growth in which cells become unlike the normal cells) of bronchial epithelium (membranous tissue composed of one or more layers of cells covering bronchial airways)</td>
<td>• Peribronchial and perivascular fibrosis – excessive build up of tissue near or surrounding the bronchus or bronchi</td>
</tr>
</tbody>
</table>
| Carbides of tungsten, titanium, tantalum    | • Hard metal disease                   | • Manufacture of cutting edge on tools         | • Peribronchial and perivascular fibrosis – excessive build up of tissue near or surrounding the bronchus or bronchi | 0808 129 3320  
www.simpsonmillar.co.uk |

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<tr>
<td>Chlorine</td>
<td>Manufacter of • Pulp and paper • Plastics • Chlorinated chemicals</td>
<td>• Manufacture of Ore compounds • Paint pigments • Reduction of Chromite Ore</td>
<td>• Cough • Coughing up blood • Shortness of breath • Tracheobronchitis – inflammation of the trachea or bronchi • Bronchopneumonia – inflammation of the bronchial tubes and the lungs</td>
<td>• Fibrosis – the formation of too many fibrous tissues • Lung cancer – tumor cells growing in the lung</td>
</tr>
<tr>
<td>Chromium (VI)</td>
<td>• Production of Ore compounds • Paint pigments • Reduction of Chromite Ore</td>
<td>• Manufacture of • Chemicals • Photographic film • Solvents • Plastics</td>
<td>• Nasal irritation • Bronchitis eg cough, wheezing, difficulty breathing, and a blocked/runny nose</td>
<td>• Fibrosis – the formation of too many fibrous tissues</td>
</tr>
<tr>
<td>Coal dust</td>
<td>• Pneumoconiosis – build up of large amounts of dust in the lungs causing a tissue reaction • Black Lung</td>
<td>• Coal mining • Manufacture of textiles</td>
<td>• Chest tightness • Wheezing • Shortness of breath</td>
<td>• Reduced pulmonary function • Chronic bronchitis - inflammation of the medium-sized airways in the lungs caused by prolonged irritation</td>
</tr>
<tr>
<td>Cotton dust</td>
<td>• Byssinosis – asthma like narrowing of the airways • Brown lung disease</td>
<td>• Manufacture of textiles • Reducing dust in the lungs • Manufacture of textiles</td>
<td>• Respiratory irritation • Hemorrhagic pulmonary edema – fluid build up in the lungs</td>
<td></td>
</tr>
<tr>
<td>Hydrogen Fluoride</td>
<td>Manufacter of • Chemicals • Photographic film • Solvents • Plastics</td>
<td>• Manufacture of • Chemicals • Photographic film • Solvents • Plastics</td>
<td>• Respiratory irritation • Hemorrhagic pulmonary edema – fluid build up in the lungs</td>
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</tbody>
</table>
| Iron oxides         | • Siderotic lung disease  
• Silver finisher's lung  
• Hematite miner's lung  
• Arc welder's lung  | • Welding  
• Foundry work  
• Steel manufacture  
• Hematite mining  
• Jewellery making  | • Cough                                                  | • Silver finisher's lung  
• Sub pleural and perivascular aggregations of white bloods that ingest foreign material  
• Hematite miner's lung  
• Diffuse fibrosislike pneumoconiosis  
• Arc welder's lung  
• Bronchitis - inflammation of the medium-sized airways in the lungs caused by prolonged irritation |
| Isocyanates         |                                                                                                          | • Manufacture of plastics  
• Chemical industry  | • Airway irritation  
• Cough  
• Shortness of breath  | • Asthma  
• Reduced lung function  |
| Kaolin              | • Kaolinosis  | • Pottery making  |                                                                 | • Fibrosis - the formation of too many fibrous tissues  |
| Manganese           | • Manganese Pneumonia  | • Chemical and metal industries  | • Acute pneumonia often fatal  | • Recurrent pneumonia  |
| Nickel              | • Nickel ore extraction  
• Smelting  
• Electronic electroplating  
• Fossil fuels  |                                                                 | • Pulmonary edema delayed by 2 days (NiCO)  | • Build up of flat scale-like cancer cells in the nasal cavity and lung  |
| Oxides of Nitrogen  | • Welding  
• Silo filling  
• Explosive manufacture  |                                                                 | • Lung congestion and edema  | • Bronchiolitis obliterans – obstructive lung disease where the bronchioles become plugged with fibrous connective tissue  |
| Ozone               | • Welding  
• Bleaching flour  
• Deodorizing  |                                                                 | • Lung edema – build up of fluid in the lung  | • Fibrosis - the formation of too many fibrous tissues  |
## Disease/Illness

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<tr>
<td>Phosgene</td>
<td>Production of</td>
<td>• Plastics • Pesticides • Chemicals</td>
<td>• Edema – build up of fluid on the lungs</td>
<td>• Bronchitis - inflammation of the medium-sized airways in the lungs caused by prolonged irritation • Fibrosis - the formation of too many fibrous tissues</td>
</tr>
<tr>
<td>Perchloroethylene</td>
<td>Dry cleaning</td>
<td>• Metal degreasing • Grain fumigating</td>
<td>• Edema – build up of fluid on the lungs</td>
<td>• Cancer of the liver and lungs</td>
</tr>
<tr>
<td>Silicia</td>
<td>• Silicosis • Pneumoconiosis</td>
<td>• Mining • Stone cutting • Construction • Farming • Quarrying • Sand blasting</td>
<td>• Acute silicosis – inflammation and scarring of nodular lesions in the upper lobes of the lungs</td>
<td>• Fibrosis - the formation of too many fibrous tissues • Silicotuberculosis – silicosis and tuberculosis in the same lung</td>
</tr>
<tr>
<td>Sulphur dioxide</td>
<td>Manufacture of</td>
<td>• Chemicals • Refrigeration • Bleaching • Fumigation</td>
<td>• Bronchoconstriction – constriction of the airways in the lungs due to tightening of surround smooth muscle • Cough • Chest tightness</td>
<td>• Chronic Bronchitis - inflammation of the medium-sized airways in the lungs caused by prolonged irritation</td>
</tr>
<tr>
<td>Talc</td>
<td>• Talcosis</td>
<td>• Rubber industries • Cosmetics</td>
<td>• Fibrosis - the formation of too many fibrous tissues</td>
<td></td>
</tr>
<tr>
<td>Tin</td>
<td>• Stanosis</td>
<td>• Mining • Processing of tin</td>
<td>• Widespread mottling of x-ray without clinical signs</td>
<td></td>
</tr>
<tr>
<td>Vanadium</td>
<td>• Steel manufacture</td>
<td></td>
<td>• Airway irritation and mucus production</td>
<td>• Chronic Bronchitis - inflammation of the medium-sized airways in the lungs caused by prolonged irritation</td>
</tr>
</tbody>
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### Compensation

If you have been diagnosed with an industrial or work related disease you could be entitled to compensation. Call our industrial disease team now on 0808 129 3320 or complete our online enquiry form at [http://www.simpsonmillar.co.uk](http://www.simpsonmillar.co.uk).

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