

Adverse Health Effects Of Oil Mist In Machine Tool Industries

Manufacturing environments that use oil-based cutting fluids often put workers health at risk. Applications such as CNC machines, screw machines and surface and centerless grinders produce an oil mist from the coolant used to keep cutting tools from overheating. Oil mist, also known as cutting oil or metalworking fluid, is an oily liquid aerosol dispersed in the air. Fine oil mist hangs in the air for long periods, similar to tobacco smoke. It has been estimated that up to one million workers in the United States are exposed to oil mist. The health effects of exposure to oil mist have been studied for several decades. Many Epidemiological studies have indicated that long-term exposure to oil mist can lead to increased susceptibility to several types of cancer. The following diseases have been associated with exposure to oil mist: skin – oil acne, contact dermatitis, and photosensitive allergic dermatitis; respiratory system – rhinitis, bronchitis, bronchial asthma, lipoid pneumonia, lung fibrosis and lung cancer; scrotum – benign and malignant tumors. According to the National Institute for Occupational Safety and Health (NIOSH), potential symptoms of exposure to high concentrations of oil mist include eye and skin irritation, shortness of breath, vomiting, fever, rapid heartbeat and a burning sensation in the mouth, throat and stomach. Industrial workers are exposed to oil mist by three avenues; skin exposure, aerial exposure and ingestion. The most frequent route of exposure is the skin. Occupational health experts believe that over three-quarters of all occupational diseases are caused by skin contact with oil mist. Oil mist by itself can be dangerous, but it can also quickly become contaminated with foreign material and chemicals which are aerosolized into mist. Many of these contaminants add to the hazards associated with oil mist. In today's highly competitive global economy, manufacturers feel pressured to increase productivity. Making machines work harder and faster often produces even more oil mist in the workplace. Even though production schedules may increase, profitability may suffer due to work-related illnesses. Sick employees don't help the bottom line, they lower productivity and increase overhead costs.

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