



Health & Safety **MATTERS**

Health & Safety Information for GMB Safety Reps

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Diesel Exhaust Emissions at Work

Introduction

In a growing number of workplaces, and increasingly in the environment, exposure to Diesel Exhaust Emissions (DEE's), known as diesel fumes is a health hazard. These fumes arise mainly from motor vehicles, but also from ships, trains and power generators. While some tighter environmental standards have been set in many areas these are not being met. In June 2012 the International Agency for Research into Cancer (IARC) re-classified DEE's as a Group 1 carcinogen, cancer causing in humans, up from Group 2A, probably cancer causing- obviously a much more serious level.

What are diesel fumes?

DEE's are a complex mixture of gases, vapours, liquid aerosols and very small particles known as particulates. These are all products from fuel combustion and include:

- Carbon/soot
- Nitrogen
- Water
- Carbon monoxide
- Aldehydes
- Oxides of nitrogen and sulphur

The actual composition of diesel fumes may vary according to a number of factors including the quality of fuel, type and maintenance of engine, fuel pump setting, the workload demand and engine temperature.

Diesel fumes and health

Problems will initially arise in the eyes and chest, from short term exposure, where irritation will go away when removed from the source of the fumes. Prolonged exposure to fumes can result in much more serious respiratory conditions including lung, and possibly, bladder, cancer. The Health & Safety Executive (HSE) estimate that in 2012 there were 605 lung cancer deaths from exposure to diesel fumes. Prolonged exposure, particularly to blue or black fumes should be avoided.

What should the employer do?

As diesel fumes contain substances that are harmful to health they are covered by the Control of Substances Hazardous to Health regulations (COSHH). The employer therefore has a duty to:-

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- *Make a suitable and sufficient risk assessment of the health risk from exposure to diesel fumes*
 - *Take steps to prevent exposure, or if not practical, adequately control the exposure at work*
 - *Where exposure cannot be prevented the employer must consider a combination of control measures such as extraction fans, tailpipe exhaust extraction systems or filters fitted, and catalytic converters.*
 - *Other measures for consideration could be turning off engines when not required, keeping doors and windows open, installing air vents, job rotation and as a **last resort** providing suitable personal protective equipment (PPE).*

What to look out for at work

Look for signs of soot on the walls, ceilings or other surfaces in the workplace. As already mentioned the colour of the smoke from engines is significant, blue and black indicating the presence of particles, with white at ignition and then disappearing due to a cold engine is generally safe. Workplaces where exposure to diesel fumes is most likely include:

- Garages and testing centres
- Bus garages
- Warehouses
- Roll on, roll off ferries
- Railways, rail repairs and tunnels
- Toll booths and car parks
- Internal enclosed roadways
- Fire stations

Where possible engines should not be started and then run indoors but for some operations this is not possible, and this is when control measures, listed above, should be used.

Conclusion

All too often when a GMB safety rep raises a problem in the workplace a standard management answer is –“well we have always done it that way!” This takes no account of new technology or new discoveries, particularly where chemical are involved. The IARC re-classification of diesel fumes should be a wake- up call to the HSE and employers to do more on both getting information out and advice on prevention. There are two HSE publications available on the HSE website, <http://www.hse.gov.uk> - Diesel Engine Exhaust Emissions (INDG286) which is a basic leaflet, and Control of Diesel Engine Exhaust Emissions in the workplace (HSG 187), which is a more detailed booklet providing information on what employers should be doing to comply with health and safety law. For more information on this or other health and environmental issues please contact craig.stuart@gmb.org.uk

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