Public Health England

Protecting and improving the nation's health

Diesel

General Information

Key Points

- diesel is a complex mixture of chemicals mainly obtained from crude oil; under normal conditions it is a liquid with a characteristic odour
- in the UK, diesel is mainly used as a fuel for road vehicles, although other forms of transport and electricity generators also use certain types of diesel
- exposure to diesel at home is uncommon, although limited skin exposure may occur whilst refuelling vehicles
- exposure may occur in workplaces were diesel is used or handled, however safe levels are in place to protect workers
- drinking diesel may lead to nausea, vomiting and abdominal pain; in serious cases damage to the digestive tract, coma, loss of muscle control, and heart and lung problems can occur
- if diesel enters the airways after being swallowed or vomited, it can cause serious lung damage
- breathing in diesel fumes may cause dizziness, drowsiness headaches; breathing in large amounts can result in coma, loss of muscle control, heart and lung problems
- diesel can cause the skin to become irritated, dry and cracked
- long-term skin exposure to diesel may result in eczema (dermatitis)
- diesel is highly flammable; it and its fumes may cause fire or explosions if not handled appropriately

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Public Health Questions

What is diesel?

Diesel is a complex mixture of chemicals mainly obtained from the distillation of crude oil. Diesel is produced by mixing fractions of crude oil distillates (petrochemicals) with various, brand-specific additives. Under normal conditions it is a liquid with a characteristic odour.

What is diesel used for?

Diesel is mainly used as a fuel for road vehicles, although other forms of transport (such as ships and trains) and electricity generators also use certain types of diesel. In the UK, ‘diesel’ or DERV refers to a fuel for running cars, vans and lorries; however the term is also used to describe a range of different fuels, all of which differ considerably in composition and physical properties.

Most diesel is ultra-low in sulphur content in order to limit the emission of sulphur-containing pollutants from engine exhaust fumes.

Diesel is also used as a cleaning solvent for tanks, engines and refinery equipment.

How does diesel get into the environment?

Release of diesel into the environment could occur following an accident where diesel is produced, transported, stored, used or disposed of. There are no natural sources of diesel.

How might I be exposed to diesel?

Exposure to diesel at home is uncommon; although limited skin exposure may occur whilst refuelling vehicles and lung exposure may occur from inhaling liquid if siphoning by mouth. Leakage of diesel onto hot engine manifolds may release small droplets of diesel into the air which may be breathed in.

Exposure to diesel may occur in jobs which involve manual filling or discharging operations within the petrochemical industry, repair or service of diesel engines or from practices where diesel is used as a cleaning agent or solvent.

If I am exposed to diesel how might it affect my health?

The presence of diesel in the environment does not always lead to exposure. In order for it to cause any adverse health effects you must come into contact with it. You may be exposed to diesel by breathing its fumes, drinking it, or by skin or eye contact with it. Following exposure to any chemical, the adverse health effects you may encounter depend on several factors, including the amount to which you are exposed (dose), the way you are exposed, the duration of exposure, the form of the chemical and if you were exposed to any other chemicals.

Drinking diesel may lead to nausea, vomiting and abdominal pain. In serious cases damage to the digestive tract, coma, loss of muscle control, and heart and lung problems can occur. A severe form of lung damage called pneumonitis may occur if liquid diesel is inhaled directly into the lungs, for example, whilst manually siphoning a tank or from inhaling vomit after swallowing diesel. This is why it is important not to make someone sick if they have swallowed diesel. If diesel is swallowed, medical advice should be obtained immediately.

Breathing in diesel fumes (not vehicle exhaust) may cause dizziness, drowsiness headaches. Breathing in large amounts can result in coma, loss of muscle control, heart and lung problems. Diesel can cause the skin to become irritated, dry and cracked; if the skin is exposed for a long time then burns may develop. Dermatitis (eczema) can develop if exposure to the skin happens often.

Diesel is highly flammable; it and its fumes may cause fire or explosions if not handled appropriately.

Can diesel cause cancer?

The International Agency for Research on Cancer (IARC) has stated that the evidence is not enough to suggest that exposure to diesel can cause cancer in humans; but that heavy diesel fuels (e.g. marine diesel) could possibly do so.

IARC has classified the exhaust fumes of diesel engines (i.e. after the fuel has been burnt) as causing cancer in humans. The evaluation is based largely on studies of workers who were heavily exposed for a long time.

Does diesel affect pregnancy or the unborn child?

There is no evidence to suggest that exposure of a mother to diesel may harm the unborn child, at levels that do not affect the mother.

How might diesel affect children?

Children are expected to have similar effects when exposed to diesel as adults.

What should I do if I am exposed to diesel?

You should remove yourself from the source of exposure.

If you have ingested diesel seek medical advice. Do **not** make yourself sick.

If you have got diesel on your skin, remove soiled clothing, wash the affected area with lukewarm water and soap for at least 10 – 15 minutes and seek medical advice.

If you have got diesel in your eyes, remove contact lenses, irrigate the affected eye with lukewarm water for at least 10 – 15 minutes and seek medical advice.

Additional sources of information

NHS Choices - Poisoning http://www.nhs.uk/Conditions/Poisoning/Pages/Introduction.aspx

GOV.UK – Storing oil at your home or business: https://www.gov.uk/oil-storage-regulations-and-safety/overview

UKTIS. Best Use of Medicines in Pregnancy http://www.medicinesinpregnancy.org/

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