

# Safe use of petrol in garages



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## Introduction

Fires and explosions caused by careless handling of petrol during vehicle maintenance occur all too easily. Even small leaks and spills of petrol have the potential to escalate into a major incident.

Petrol fires are usually serious and often result in fatal or major injuries, either to the person doing the maintenance work or to other employees and even customers who may be nearby. There is often major property damage as well.

With the different fuel types on the forecourt, incorrect filling of diesel vehicles with petrol, and vice versa, is now a major problem. It is estimated that there are around 120 000 misfuelling operations each year, most of which require fuel replacement.

Petrol is a highly flammable liquid and any spillage will evaporate to form a flammable, heavier-than-air vapour which is easily ignited, even at low temperatures.

This leaflet is aimed at owners, employers and supervisors in the motor vehicle repair and recovery industries. It provides advice on how to handle petrol safely and also includes a helpful list of dos and don'ts for employees.

## Main causes of ignition

Common ignition sources are:

- smoking and lighted matches;
- welding and cutting equipment;
- heaters;
- all types of electrical equipment, unless these are designed as suitable for use in a flammable atmosphere. Even low-voltage inspection lamps, if damaged, can ignite petrol vapour.

As well as the sources listed above, the action of draining petrol into a container can generate static electricity which, if not controlled, can result in a spark.

When thinking about sources of ignition, remember that petrol vapour does not disperse easily but may spread over a wide area. It tends to sink to a low level and may collect in tanks, cavities, drains, pits or areas where there is little air movement.

### **What the law says**

The Dangerous Substances and Explosive Atmospheres Regulations (DSEAR) 2002 require employers to assess the risk from using such substances and eliminate or reduce the risk so far as is reasonably practicable.

### **Key precautions you need to take**

It is important to drain any petrol into a suitable container large enough to hold the contents of the fuel tank, with a cap that can be securely closed.

Suitable plastic carry-cans can only be used for quantities of less than ten litres. For quantities greater than ten litres, containers should be made of metal and be stable or held within a stable framework so that they are not easily knocked over (a large petrol spillage can be ignited a long way from the site of the spillage).

Unless petrol is to be returned to the vehicle immediately, it should be stored in a designated, lockable, well-ventilated area, preferably outside the workshop.

Under no circumstances should drained petrol be added to the waste-oil tank. Any contaminated petrol or petrol/diesel mixtures should be consigned as a hazardous waste, giving a clear description of the nature of the material to the waste contractor.

### **Removing fuel**

The use of a proprietary fuel retriever solves most of the hazards of fuel removal by:

- providing a suitable container;
- providing the means to eliminate static electricity;
- in some cases capturing any petrol vapour displaced.

But it is still important to follow the manufacturer's instructions, paying particular attention to the correct use of vapour recovery pipework and earthing straps.

Fuel removal should only be carried out by a competent person (someone with the necessary skills, knowledge and experience to do the work), who has been shown how to use the equipment and understands the hazards of the operation.

Even when using a fuel retriever, petrol removal should only be carried out in a well-ventilated area, from which all ignition sources have been removed, preferably in the open air and well away from pits or other openings in the ground.

Normally it will be possible to remove the fuel through the filler cap but in some vehicles anti-theft and rollover safety devices may prevent this or make it very difficult.

By using specific adaptors available from vehicle manufacturers, fuel removal from the fuel lines is usually still possible. In such cases repairers should follow the instructions given in the vehicle manufacturer's workshop manual, using whatever adaptors are recommended.

## Dos and don'ts of handling petrol safely

Most of the hazards can be overcome by following the **dos** and **don'ts** below.

### **Dos:**

- Do** use a fuel retriever wherever possible, following the manufacturer's instructions on vapour recovery and use of earthing straps.
- Do** drain fuel outdoors or in a well-ventilated area.
- Do** warn others verbally and/or by warning signs that fuel draining is in progress.
- Do** disconnect the vehicle battery before draining fuel.
- Do** remove all combustible materials from the work area.
- Do** keep a foam or dry powder extinguisher nearby.
- Do** remove petrol via the filler tube where possible.
- Do** use adaptors provided by vehicle manufacturers when removing fuel from the fuel lines.
- Do** use metal containers with secure caps for holding drained fuel.
- Do** make sure that the containers cannot easily be knocked over during filling.
- Do** use containers large enough to hold the contents of the fuel tank.
- Do** soak up any spills immediately using absorbent granules or similar material.
- Do** mark fuel containers with hazard labels to show their contents.
- Do** use earthing straps between the vehicle chassis and the metal container to eliminate static electricity.
- Do** keep any fuel containers in a well-ventilated, lockable store, preferably outside the work area.
- Do** follow the same precautions when transferring fuel from the retriever back to the vehicle or into any other container.

### **Don'ts:**

- Don't** drain fuel over or close to a pit or drain because of the risk of flammable vapour accumulating to create an explosive atmosphere.
- Don't** allow work that can produce a source of ignition, such as welding, electrical or other hot work, to be carried out while removing petrol.
- Don't** use any electrical equipment on or near the vehicle while fuel draining is in progress. This includes the use of inspection lamps, cordless phone handsets, mobile phones and pagers.

*(continued overleaf)*

- Don't** allow smoking in the area.
- Don't** work on a fuel tank or remove a sender unit before removing the fuel.
- Don't** drain fuel into open-topped containers such as buckets and watering cans.
- Don't** drain fuel into any waste oil container.
- Don't** drain fuel into plastic containers, except for quantities less than ten litres.
- Don't** store drained or contaminated fuel in the workplace unless it is to be returned to the vehicle immediately.
- Don't** wear clothing on which petrol has been spilt – stop work and change into uncontaminated clothing before continuing to work.

## **Find out more**

*Dangerous substances and explosive atmospheres. Dangerous Substances and Explosive Atmospheres Regulations 2002. Approved Code of Practice and guidance* L138 HSE Books 2003 ISBN 978 0 7176 2203 0  
[www.hse.gov.uk/pubns/books/l138.htm](http://www.hse.gov.uk/pubns/books/l138.htm)

*Health and safety in motor vehicle repair and associated industries* HSG261 HSE Books 2009 ISBN 978 0 7176 6308 8 [www.hse.gov.uk/pubns/books/hsg261.htm](http://www.hse.gov.uk/pubns/books/hsg261.htm)

*Guidance on the application of the Dangerous Substances and Explosive Atmospheres Regulations (DSEAR) 2002 to motor vehicle repair (MVR)* Information Document HSE 803/71 [www.hse.gov.uk/foi/internalops/fod/oc/800-899/803-71id.pdf](http://www.hse.gov.uk/foi/internalops/fod/oc/800-899/803-71id.pdf)

HSE's motor vehicle repair website: [www.hse.gov.uk/mvr](http://www.hse.gov.uk/mvr)

## **Further information**

For information about health and safety, or to report inconsistencies or inaccuracies in this guidance, visit [www.hse.gov.uk/](http://www.hse.gov.uk/). You can view HSE guidance online and order priced publications from the website. HSE priced publications are also available from bookshops.

This guidance is issued by the Health and Safety Executive. Following the guidance is not compulsory, unless specifically stated, and you are free to take other action. But if you do follow the guidance you will normally be doing enough to comply with the law. Health and safety inspectors seek to secure compliance with the law and may refer to this guidance.

This leaflet is available at [www.hse.gov.uk/pubns/indg331.htm](http://www.hse.gov.uk/pubns/indg331.htm).

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