Tank systems for petrol

IMPORTANT LEGAL CONDITIONS FOR HANDLING PETROL

The requirements for handling petrol (H 224) are comparable to those of diesel fuel (H 226), but are somewhat stricter. The more stringent requirements are due to the usually higher water hazard class in accordance with the German Water Management Act and to the lower flash point (extremely flammable liquid according to GHS) of petrol. The more stringent requirements are described below.

Storing petrol

There are many laws and regulations that must be complied with when storing petrol. Excerpts from the German Ordinance on Industrial Safety and Health (Betriebssicherheitsverordnung (BetrSichV)), the German Water Management Act (Wasserhaushaltsgesetz (WHG)), the German Technical Regulations for Hazardous Substances (Technische Regel Gefahrstoffe (TRGS)) and the regulations related to garages in Germany (Garagenverordnung) are given here.
These regulations clearly define the permissible storage quantities, storage site requirements, and the risk assessments required by the employer.
This information has been clearly organised in the following table.
For storage tanks with a capacity of 200 L or more, a restraining device is required if the tanks do not have a double-walled design.

	Technical Regulations for Hazardous Substances (TRGS) 510	Ordinance on Industrial Safety and Health (BetrSichV)	Water Management Act (WHG)	Regulations on Garages (Garagenverordnung)
Storage in homes	no			
Storage in basements	not regulated			
Storage in retail areas	not regulated	Risk assessment reqired due to risk of explosion	General duty of care under Section 5 and Duty of Care Principle Section 62	
Storage in work areas	regulation for small quantities applies up to 10 L; quantities exceeding 10 L must be stored in an F90 safety cabinet or hazardous materials storage area			
Storage in garages				20 L in small garages up to 100 m², not permitted in larger garages
Storage outdoors	Active storage – distance of 10 m from building; passive storage up to 200 L – distance of 3 m; passive storage up to <1,000 L – distance of 5 m from building	Risk assessment reqired due to risk of explosion		

Transporting petrol

The following regulations must be observed when transporting petrol (see page 32). They go above and beyond the scope of requirements for transporting diesel fuel.

- Maximum quantity as defined in table 1.1.3.6 ADR (1000 point rule) is 333 l. For quantities greater than this, a dangerous goods driving licence is generally required and the German Craftsman Regulation in accordance with ADR 1.1.3.1 c) no longer applies.
- Mobile fuel filling stations with ADR certification require this for packaging groups II and III.

Transferring and filling petrol

The Ordinance on Industrial Safety and Health (BetrSichV) is the German implementation of European Directive 95/63/EC and regulates the provision of equipment by the employer. This also includes the risk assessment of the equipment, which in turn includes the assessment of the risk of explosion in accordance with TRBS 2152 Part 1. If the formation of hazardous, explosive atmospheres cannot be prevented with certainty, the employer is to assess the following:

1. the probability and duration of the occurrence of a hazardous, explosive atmosphere,
2. the probability of the existence or creation and the coming into effect of ignition sources, including electrostatic discharges, and
3. the extent of the effects to be expected from explosions.

The assessment must refer to the specific local and operating conditions.
Note: More than 10 litres of contiguous explosive atmosphere in enclosed spaces must be viewed as a hazardous explosive atmosphere, regardless of the size of the space.

What does this mean for you in your day-to-day work?

In general, the transferring and filling of petrol must be done in well ventilated rooms or outdoors.

According to the Ordinance on Industrial Safety and Health, you should only provide devices/equipment that are state of the art. In addition, you should pay special attention to the risk assessment when handling petrol.

The best option for reducing the risk is never to allow a contiguous explosive atmosphere of more than 10 litres to form in the first place. The current state of the art only enables this to be achieved inside containers in use by means of explosion-suppressing inserts.

Another option is to prevent the explosive atmosphere from being ignited by ignition sparks by placing flame arresters into the container openings.

If the container has an explosion-proof design, neither an explosion-suppressing insert nor a flame arrester is required up to a container size of 1000 l. As a rule, explosion-proof containers are made from thick-walled sheet steel, although they have the disadvantage of being very heavy.

Should you use equipment that is manufactured without explosion-suppressing inserts or flame arresters, the probability of the existence or creation and the coming into effect of ignition sources, including electrostatic discharges, is to be especially assessed. In practice, this is very difficult to achieve with changing types of work (forest, road, constructions sites or in the workshop). As a rule, the creation of sources of ignition and electrostatic charge cannot be fully prevented and therefore ruled out safely enough.

We therefore recommend using canisters or containers > 10 L, which are not designed to be explosion-proof, with explosion-suppressing inserts or flame arresters.

Important information related to risk assessments can be found in the operating instructions for CEMO petrol tank systems. This will make it easier for you to fulfil your obligations as an employer.