



SAFETY BULLETIN 10/17

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Prevention of Accidents due to Overheated or Burning Tyres



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Transport vehicle tyre fires mainly occur when travelling on highways, but may also break out when parked after travelling.

1. Causes and effects of tyre fires

There are various causes for the overheating and ignition of a tyre, including:

- badly adjusted or badly maintained brakes,
- poorly maintained, or failure of, axle component(s),
- use of non-original equipment manufacturer (OEM) or approved replacement parts or components of the vehicle running gears
- overloading of the vehicle,
- inadequate inflation of the tyres,
- loss of inflation of the tyre whilst travelling,
- overloading of one twin tyre when the other deflates,
- excessive use of the brakes,
- tyres in bad condition,
- malfunction of anti tow away device resulting in braking activation during driving,
- air line leakage resulting in braking activation during driving

In some cases, a fire may occur after stopping because there is no longer any cooling effect from air flow during travelling.

2. What to do in case of an overheating or burning tyre?

A major hazard of an overheated tyre is the risk of bursting without warning. If there is still air pressure in the tyre this can lead to a dangerous blast effect and possible projection of pieces of the tyre, which may result in serious injury and/or damage to the vehicle. An additional hazard is the release of toxic fumes from burning materials.

A tyre, which was thought to be extinguished, can easily re-ignite, particularly if the source of heat is still present (e.g. an overheated brake drum or hub).

The first action should always be to call the fire service which will take appropriate actions including water spray to cool the tyre, wheel and surrounding areas until completely safe.

The risk of a tyre bursting should be considered before using a fire extinguisher. The use of dry powder extinguishers can be ineffective as it does not provide an adequate source of cooling.

Note: Particular caution is necessary in the case of twin tyres as a burning tyre can heat a nearby tyre sufficiently to also catch fire and burst.

If signs of overheating are detected when parked, for example smoke or glowing hub, or if flames break out, the driver should:

- if the vehicle is moving, stop in a safe area as soon as possible, ideally away from other vehicles, any pedestrians, residential areas, flammable materials,
- call, or get someone else to call, the fire service,
- keep people away,
- consider the use of the vehicle fire extinguishers based on the company policy,
- stay clear of the area of the hazard from a bursting tyre only detach the motive unit if it is safe to do so,
- only work on the tyre or wheel assembly once it has completely cooled.

Note: Do not replace the tyre or wheel and continue transport unless the extent of the damage has been assessed and the root cause of the fire has been identified.

3. Prevention

- Use tyres of a type and size suitable for the vehicle.
- Inflate tyres to the right pressure for the load being carried, ideally when cold.
- Consider use of tyre pressure monitoring systems.
- Regularly check the pressure when cold and condition of tyres.
- Regularly check that all of the wheel nuts are correctly fitted, and to the correct torque, especially after doing any work on the wheel.
- Maintain brakes and axle components as a minimum in accordance with manufacturers' recommendations and consider periodic replacement.
- Use only OEM / approved replacement parts and components

- Train drivers to make maximum use of secondary braking systems to avoid overheating of the primary braking systems.
- Carry out a vehicle condition check when the driver takes break during the trip. The vehicle condition check shall include the tyre condition inspection and visual / audio sign of air line leakages
- Regularly check the anti tow away device.

References:

- Safety Info 17/17, Prevention of accidents due to overheated or burning tyres, *European Industrial Gases Association*, www.eiga.eu

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