



HSE



Alert No: T009-04

Tyre Explosion

What Happened

Tyre explosion: Fitter applied oxy torch to heat and loosen the 12 nuts to enable removal of wheel. Two wheel nuts were removed without heat, the tyre burst when heat was applied to the fourth nut.

What Caused It

The hydrocarbon vapours can come from more than one source; from the *pyrolysis of the rubber of the tyre, or from the vaporization of tyre lubricating grease or oil spilled onto the hub

Corrective Actions

No hot work should be carried out on vehicle wheels fitted with pneumatic tyres unless the tyres have been removed from the rim
These type of incidents needs to be circulated to all industries

Lessons Learned

Deflated tyres are believed to behave similarly to fully inflated tyres.

The pressure produced in the tyre by an explosion can be up to 8 times the initial internal pressure

Tyre explosions are much more violent than a simple blow out

* **Pyrolysis** transforms hazardous organic materials into gaseous components, small quantities of liquid, and a solid residue (coke) containing fixed carbon and ash. Pyrolysis of organic materials produces **combustible gases**, including carbon monoxide, hydrogen and methane, and other hydrocarbons.

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