

Economic Commission for Europe

Inland Transport Committee

Working Party on the Transport of Dangerous Goods
(81st session)
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Submitted by Germany

Summary

- Subject matter: Completion of the explosion protection concept (i.e. reduction of the potential risk of explosion of flammable gas/air mixtures of ADR classes 2 and 3)
- Action: Information of the working party
- Documents: None

Introduction:

In order to ensure explosion protection in terms of avoiding and reducing the potential risk of explosion of gas/air mixtures of classes 2 and 3, it seems to be advisable to enhance the explosion protection concept of ADR. An important aspect of the points set out below is also the safety-relevant link between the potential leakage during transport of dangerous goods of classes 2 and 3 and the requirements for type FL vehicles in accordance with chapter 9. For example, the following areas are of particular interest in this context:

- Until now, requirements for equipment and for the design of items of equipment have only been specified for electrical equipment; however, in the framework of explosion protection, non-electrical equipment must also be regarded as a potential source of ignition – especially if there are hot surfaces.
- The useful approach of ensuring explosion protection by way of operational regulations has been prepared in ADR with regard to technical features (battery master switch); it would, however, be desirable to also incorporate a relevant operating rule.
- In the meantime, the requirements for protection systems such as flame arresters and explosion-pressure proof tanks have been specified in more detail as a result of standardization; they should be considered for incorporation into ADR.
- The formation of dangerous mixtures, which is largely prevented by means of vapour return systems, could be taken into account.

Explosion protection in the European Union is coherently regulated by two Directives (so-called ATEX concept):

Directive 94/9/EC (design requirements for explosion-proof equipment and protective systems) and Directive 1999/92/EC (requirements for improving the safety and health protection of workers potentially at risk from explosive atmospheres).

Against this background, a homogenization and harmonization of the ADR explosion protection concept on the basis of the ATEX concept seems to be reasonable.

Objective:

Currently, there are **no** new findings or accidents justifying a **tightening** of the existing ADR requirements concerning explosion protection measures.

Therefore, all ADR amendments can only be aimed at achieving more clarity and – if possible – some facilitations. The relevant ADR requirements should be such that, if they are met, the ATEX requirements are met, too.

Action:

Germany currently carries out a research project aimed at examining the actual explosion risks associated with the transport and the filling/discharge of substances of classes 2 and 3.

When the final report is available, Germany will examine the results with regard to a possible further development of ADR.

In that respect, opinions of the other Member States on the ADR explosion protection concept are welcome.
