

Summary of this report of the Netherlands, also in relation to the regulations of ADR 2021



This report of 2013 is a representation of a number of incidents, where during the carriage of batteries in bulk the load, whether or not in combination of the bin of the vehicle/container, a fire has started due to short circuit. To find out the cause of these fires, a number of conclusions have been drawn and some recommendations have been made. However, these conclusions and recommendations have been drawn based on the then (in 2013) applicable regulations of ADR. This legislation has changed during over the years and now (as they apply from 2021) the following provisions apply to this kind of carriage of batteries:

1.1. Legislation on bulk transport

The carriage of batteries of UN 2794 is permitted under the following provisions (see 7.3.3.1 and 7.3.3.2.5 ADR):

VC1 Carriage in bulk in sheeted vehicles, sheeted containers or sheeted bulk containers;

VC2 Carriage in bulk in closed vehicles, closed containers or closed bulk containers.

And under the following additional conditions:

AP8 The design of the load compartment of vehicles or containers shall take account of any residual currents and impacts from the batteries. The load compartments of vehicles or containers shall be of steel resistant to the corrosive substances contained in the batteries. Less resistant steels may be used when there is a sufficiently great wall thickness or a plastic lining/layer resistant to the corrosive substances.

Note: *Steel exhibiting a maximum rate of progressive reduction of 0.1 mm per year under the effects of the corrosive substances may be considered as resistant.*

The load compartments of vehicles or containers shall not be loaded above the top of their walls.

Carriage is also permitted in small plastic containers which shall be capable of withstanding, when fully loaded, a drop from a height of 0.8 m onto a hard surface at - 18 °C without breakage.

1.2 Legislation on packaged cargo

Packaging instruction P801 applies to the transport of used batteries as packaged cargo. This packaging instruction requires among other things, that measures shall be taken to prevent short circuits (e.g. batteries are discharged, individual protection of the battery terminals, etc.) and that non-conductive material must be used.

Conclusions

- This nature of transport, from which these incidents did arise, are permitted in bulk.
- The cause of the fires was the occurrence of a short circuit in the batteries, which are not or completely discharged. Because sometimes non-discharged batteries come into contact with each other and also often with the wall of the load compartment, a fire can start.
- When no amendments are made to the regulations, this kind of incidents will continue to occur.

From an enforcement perspective it can be said that there are possibilities within the regulations of ADR to take enforcement action against such unsafe transport. The following provisions of 7.3.1.12 ADR can be used for this:

Substances, for example wastes, which may react dangerously with one another and substances of different classes and goods not subject to ADR, which are liable to react dangerously with one another shall not be mixed together in the same bulk container, container or vehicle. Dangerous reactions are:

- (a) Combustion and/or evolution of considerable heat;
- (b) Emission of flammable and/or toxic gases;
- (c) Formation of corrosive liquids; or
- (d) Formation of unstable substances.

Recommendations

However, that this kind of transportations are daily practice, it would be better to adapt the regulations of ADR in such a way that no more short circuits can occur. This can be done by:

- Forbidding the transport of batteries in bulk;
- Providing the walls of the vehicles with a plastic or rubber coating;
- Shielding all battery poles of the batteries;
- Unloading the batteries prior to transportation.

A target requirement is another option stating that the batteries should be loaded in a manner that no short circuits can occur.

A joint Dutch / Finnish proposal or a proposal from the FEAD itself could be drawn up for the next meeting of the WP.15.
