

Economic Commission for Europe

Inland Transport Committee

Working Party on the Transport of Dangerous Goods

13 September 2013

Joint Meeting of the RID Committee of Experts and the Working Party on the Transport of Dangerous Goods

Geneva, 17-27 September 2013

Item 6 (b) of the provisional agenda

Proposals for amendments to RID/ADR/ADN new proposals

Accident with UN1845 Carbon dioxide, solid (dry ice)

Transmitted by the Government of Austria

Summary

Executive summary: The aim of this document is to show that the transport of dry ice might be just as dangerous as the transport of dry ice as coolant and that it is important to have the driver's cabin isolated from the load compartment.

Action to be taken: Justify the difference for the transport of dry ice and dry ice as coolant and add some wording regarding the driver's cabin.

Related document: ECE/TRANS/WP.15/AC.1/2013/44 (F)

Headline in an Austrian newspaper (Kurier, 09.07.2013, translated):

Celebrity-Cook died during dry ice transport

Cook Gebhard Bucher seems to have died due to asphyxiation

Wiesbaden, 6.7.2013 18:00



Foto: Wiesbaden112.de/dpa/APA

Video (German): <http://www.youtube.com/watch?v=1KWvZ6vpJzM>

Only in the case of dry ice as coolant there are requirements but in this case nothing was cooled during transport. The hazard is evidently the same.

The safety information of the IGV (Germany)

(Link: <http://www.industriegaseverband.de/igv/sicherheitshinweise/SHW-Trockeneis.pdf>)

gives the advice to transport dry ice not in the cabin but only in a load compartment isolated from the cabin. If the driver's cabin is not separated, it is useless to have a warning affixed at each access point in a location where it will be easily seen by persons opening or entering the vehicle (5.5.3.6.1), but sufficient ventilation is required. Therefore it is advised to ensure that the vehicles are well ventilated, or to use gas detection systems during transport.

Very often commercial vehicles are used to deliver packages with dry ice as coolant, where the cabin is not completely separated.

In the case of a refrigerating unit the carbon dioxide will not enter the driver's cabin. Therefore we support the French proposal. It might be useful to add some wording in regard to this requirement.

There is safety information from EIGA that shows clearly that carbon dioxide is not just an asphyxiant:

(Link: [http://www.eiga.eu/index.php?id=179&tx_abdownloads_pi1\[action\]=getviewclickeddownload&tx_abdownloads_pi1\[uid\]=1617&no_cache=1](http://www.eiga.eu/index.php?id=179&tx_abdownloads_pi1[action]=getviewclickeddownload&tx_abdownloads_pi1[uid]=1617&no_cache=1)).

The situation with liquid nitrogen is different.

The amount of nitrogen that has to be added to the atmosphere in a vehicle to cause danger is much higher than the amount of carbon dioxide (50% against 5%).

The usual Dewars with nitrogen refrigerated will release much less gas because the insulation is excellent. The usual insulation of dry ice is much less effective; therefore the release rate is much higher (usually 0.3 kg nitrogen against up to 3 kg carbon dioxide per package and day).

Conclusion

It should be considered to use the regulations for dry ice as coolant for all transports of dry ice and to discuss the regulation for the dry ice to ensure the same level of safety as existing industry guides.
