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Inland Transport Committee

Working Party on the Transport of Dangerous Goods

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

Geneva, 21 September – 1 October 2021

Item 5 (b) of the provisional agenda

Proposals for amendments to RID/ADR/ADN: new proposals

Refrigerating machines and heat pumps

Transmitted by the International Association of Dangerous Goods
Safety Advisers (IASA)*.**

Summary

Executive summary: In accordance with special provision 119, refrigerating machines or, in accordance with special provision 291, up to 12 kg of gas are exempted from the other dangerous goods provisions if they can be assigned to UN number 3358 or UN number 2857. Heat pumps are basically also refrigerating machines, but have exactly the opposite operating principle: instead of cold, these units generate heat.

Action to be taken: IASA requests the Joint Meeting to confirm that heat pumps with a capacity of up to 12 kg of gas in accordance with special provision 119 or 291 can also be designated as refrigerating machines for the purposes of RID/ADR and can also be exempted by these special provisions.

* A/75/6 (Sect.20), para 20.51.

** Circulated by the Intergovernmental Organisation for International Carriage by Rail (OTIF) under the symbol OTIF/RID/RC/2021/25.

Introduction

1. Refrigerating machines of UN numbers 2857 and 3358 containing up to 12 kg of gas may be fully exempted from the dangerous goods regulations if they comply with the requirements of special provision 119 or 291. Heat pumps work on exactly the same principle as refrigerating machines, except that the aim here is not to produce cold but, as the name suggests, heat. IASA is of the opinion that it would therefore be logical also to classify heat pumps as refrigeration machines or to adapt the proper shipping name and the text of the special provisions so that heat pumps can also be exempted. The easiest way to do this would be for the Joint Meeting to decide that heat pumps can be classified as refrigerating machines too. If this approach is not possible, this issue would have to be dealt with through the UN Sub-Committee of Experts.

Explanation

2. Can or may refrigeration machines be defined as units which extract heat from a certain object or medium, regardless of whether this medium is used to generate heat or cold? This includes units such as refrigerating machines or heat pumps, which function according to the same principle, except that the aim of refrigerating machines is to generate cold (text according to special provision 119: "... designed for the specific purpose of keeping food or other items at a low temperature ..."), whilst heat pumps have exactly the opposite purpose. Energy is extracted from an object or medium to generate heat. Seen in this way, every refrigerator is also a kind of heat pump, because it releases the energy extracted from the inside of the refrigerator to the kitchen and heats it up. If heat pumps cannot be classified as refrigerating machines, UN numbers 3363 or 3537/3538 would have to be used for them, depending on the quantity and type of gas, which would mean inconsistency with UN numbers 3358 or 2857.

Proposals

3. Include a Note at the end of special provision 119 to read as follows:

“NOTE: For the purposes of carriage, heat pumps may be assigned to UN number 2857.”

4. Include a Note at the end of special provision 291 to read as follows:

“NOTE: For the purposes of carriage, heat pumps may be assigned to UN number 3358.”

Justification

5. Consistency of the regulations for articles that pose the same danger.
