

ECONOMIC COMMISSION FOR EUROPE

INLAND TRANSPORT COMMITTEE

Working Party on the Transport of Dangerous Goods

Joint Meeting of the RID Safety Committee and the  
Working Party on the Transport of Dangerous Goods  
(Geneva, 1-10 September 2003, agenda item 2)

CLASSIFICATION OF BUTADIENE MIXTURES

Transmitted by the International Union of Railways (UIC)

**Executive summary:** The intention of this proposal is to prevent the adoption of the 40% concentration limit for butadienes in the new entry for UN 1010 butadienes and hydrocarbon mixtures, stabilized.

**Action to be taken:** Adoption of the proposed amendments to 2.2.2.3, chapter 3.2, table A, 4.1.4.1 P200, table A and the table of 4.3.3.2.5;

**Related Documents:** ST/SG/AC.10/C.3/2001/32 (UN SCTDG) TRANS/WP.15/AC.1/-OCTI/RID/GT-III/2003/56 and Add.

**Introduction**

The UN Sub-Committee of Experts on the Transport of Dangerous Goods in its nineteenth session, 2-6 July 2001, adopted a proposal from the expert from the USA to introduce an alternative proper shipping name for entry UN 1010: "butadienes and hydrocarbon mixture, stabilized" containing more than 40% butadienes, because "the PSN "Mixtures of 1,3-butadiene and hydrocarbons, stabilized" is currently included in ADR for UN 1010, but is not listed as an alternative PSN in the Model Regulations."

The secretariat, in the documents on the Harmonization of RID/ADR with the UN Recommendations, proposes to make similar amendments to the current RID/ADR texts. The representative of UIC/IUR, in the session of the Working Group on Harmonization and in the July 2003 session of the UN SCTDG, explained that practice has shown, that the amended entry for UN 1010 might lead to difficulties and even additional risks, for the following reasons:

1) The 40% concentration limit value was proposed by the USA because this mixture is produced as a by product of the process of synthesizing ethylene, and because (according to the expert from the USA) in RID/ADR there has been always such a limit value for the concentration of butadiene. According to our recollection, however, there has never been such a concentration limit in RID/ADR. The RID/ADR, however, specifies limit values for the vapour pressure of the mixtures at 70 °C and density at 50 °C. These values are used to establish test pressure and maximum permissible mass of contents per litre of capacity for pressure receptacles and tanks and they are the basis for the markings of the receptacles and the tanks.

2) According to experts from the petrochemical industries mixtures with a concentration less than 40% butadienes should also be stabilized for safety reasons.

3) If the 40% limit value is adopted, mixtures with less than 40% butadienes can not be classified under UN 1010, and will have to be classified under UN 1965, mixtures A to C or even under UN 3161. This is definitely a misleading situation for emergency response.

Because these mixtures are transported on a very large scale between oil refineries and petrochemical industries in Europe in rail tank wagons and other tanks, the UIC/IUR urgently asks the Joint RID/ADR-meeting not to adopt the amendments in the form proposed by the secretariat.

The UN-Sub-Committee in its July 2003 session unfortunately did not discuss this matter to an end, but there seemed to be enough sympathy with the experts to delete at least the 40% limit value.

**Proposals** (see TRANS/WP.15/AC.1/ - OCTI/RID/GT-III/2003/56/Add..)

Add.2: 2.2.2.3: in the amended name for UN 1010, delete:

"containing more than 40% butadienes", the text in square brackets should remain.

Add. 3: Table A, UN 1010, in the amended name, delete:

"containing more than 40% butadienes", the text in square brackets should remain. (P.M. amendments to Table B!).

Add.4, 4.1.4.1, P200, Table 2, UN 1010,

Column name and description: delete "containing more than 40% butadienes".

Test pressure, bar: maintain "10".

Filling ratio: maintain "0,50".

For Add.4, it is proposed not to adopt the amendments for UN 1010 in Table 4.3.3.2.5, but to amend the last name in column 2 of the present text to read:

"butadienes and hydrocarbon mixture, stabilized". The values in the other columns should remain as they are.

**Justification**

Mixtures of butadienes and hydrocarbons have been transported according to the provisions of the existing RID/ADR in tanks safety on a very large scale. Introducing a minimum concentration of 40% butadienes would substantially reduce the safety level of such transports, for the following reasons:

Less specific classification of mixtures with less than 40% butadiene and loss of information for emergency response, and

No more fixed values for filling ratio and test pressure for receptacles and tanks, and hence problems with marking of receptacles and tanks.

N.B. Tanks for the transport of such mixtures are mostly multipurpose tanks. The maximum permissible load mass in kg for each gas to be loaded in the tank should be perfectly clear to the fillers.

**Safety implications**

Existing safety level remains unchanged.

**Feasibility**

No change.

**Enforceability**

No change.

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