



Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals

Sub-Committee of Experts on the Transport of Dangerous Goods

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Item 6 (e) of the provisional agenda

Miscellaneous proposals for amendments to the Model Regulations on the Transport of Dangerous Goods: other miscellaneous proposals

Transport of butylene

Submitted by the expert from Spain*

Introduction

1. In the last years, Spain has been searching for harmonizing the names of the UN numbers, specifically for the Spanish language version. Additionally, attention has been focused on those cases where the name and description of the UN numbers is not the same in the UN Model Regulations as in RID/ADR, for all languages.
2. This has led to the submission to the Joint Meeting of a series of proposals for harmonization (ECE/TRANS/WP.15/AC.1/2019/32, ECE/TRANS/WP.15/AC.1/2020/37, ECE/TRANS/WP.15/AC.1/2020/39, ECE/TRANS/WP.15/AC.1/2020/41).
3. Following the discussion of ECE/TRANS/WP.15/AC.1/2019/32 at the Joint Meeting, Spain was invited to submit to the Sub-Committee a proposal for an amendment related to UN 1012, BUTYLENE. Name and description of UN 1012 in the Model Regulations and RID/ADR are the following:

UN Number	UN Model Regulations	RID/ADR
1012	BUTYLENE	BUTYLENES MIXTURE or 1-BUTYLENE or cis-2-BUTYLENE or trans-2-BUTYLENE

* 2020 (A/74/6 (Sect.20) and Supplementary, Subprogramme 2)

4. Butylene, also known as butene, is a series of alkenes with the general formula C_4H_8 . There exist four different isomers of alkenes that correspond to the mentioned formula:

IUPAC name	Common name	Structure
But-1-ene	<i>1-butylene</i>	
(2Z)-but-2-ene	<i>cis-2-butylene</i>	
(2E)-but-2-ene	<i>trans-2-butylene</i>	
2-methylprop-1-ene	isobutylene	

5. The name “butylene” includes all four isomers.

6. Nevertheless, UN 1055 is a UN number specifically devoted to one of these monomers, isobutylene. The transport conditions for both UN numbers are mostly similar, but slightly different (slightly higher maximal allowable pressure and lower filling ratio for isobutylene) and it seems interesting to clearly separate isobutylene from the other monomers.

7. European regulators for the land modes and the related industry recognized the need to clearly indicate that UN 1012 did not cover isobutylene, and this led to a modification for the name of UN 1012. The modification was already introduced before RID/ADR 2001. Industry and regulators of the European environment were concerned about a not appropriate use of this entry.

8. To clearly avoid that isobutylene is classified and transported under UN 1012, Spain considered that two possible alternative ways forward could be analyzed:

- Either amend the name and description of UN 1012 to specifically name the applicable monomers, by using the same name and description as in RID/ADR:

BUTYLENES MIXTURE or 1-BUTYLENE or cis-2-BUTYLENE or trans-2-BUTYLENE

This clearly includes the three monomers (all except isobutylene) and the mixture of all four monomers, and by not naming isobutylene excludes isobutylene.

- Or include a Special Provision applicable only to UN 1012, indicating that for the transport of isobutylene UN 1055 should be used.
9. For this reason, Spain submitted document ST/SG/AC.10/C.3/2020/16 for consideration at the fifty-seventh session of the Sub-Committee, including these two options:
- Option 1 amended the name and description in the Dangerous Goods List of Chapter 3.2 for UN 1012 to read (same name and description as currently in RID/ADR): “UN 1012 BUTYLENES MIXTURE or 1-BUTYLENE or cis-2-BUTYLENE or trans-2- BUTYLENE”.
 - Option 2 proposed to insert into the Dangerous Goods List of Chapter 3.2 a new special provision for UN 1012 with the following text:
 - “**SP XXX: This UN number covers the transport of butylenes mixture, or 1-butylene or cis-2-butylene or trans-2-butylene. For the transport of isobutylene, see UN 1055.**”
10. In June 2020, document ST/SG/AC.10/C.3/2020/16 received written comments by different delegations, and a further online informal discussion was held. Spain is very thankful for the interest of the different delegations and appreciates the help to find a solution for this subject.
11. In the discussion, it was mentioned that option 2 was most adequate to lead the user of the Model Regulations to the correct entry and, therefore, most delegations could support option 2.
12. Some delegations were concerned that including a special provision into the Model Regulations, without modifying the name of the entry for UN 1012, would not solve the disharmonization with RID/ADR, but Spain volunteered to submit a proposal to the Joint Meeting to include the same entry and special provision also for RID/ADR, if the proposed changes were adopted by the Sub-Committee.
13. Finally, some editorial changes were also proposed. The following proposal includes all these recommendations made by the different delegations.

Proposals

14. Include SP XXX for UN 1012 into the Dangerous Goods List of Chapter 3.2 and include into Chapter 3.3 the following new special provision:
- “SP XXX: This entry applies to mixtures of butylenes, 1-butylene, cis-2-butylene and trans-2-butylene. For isobutylene, see UN 1055.”**
15. Modify the Alphabetical Index of Substances and Articles of Chapter 3 to include the first three isomers of alkenes detailed in paragraph 4 above, related to “butylene” and UN 1012 (the isobutylene associated to UN 1055 is already included in that list).
- 1-butylene: Class 2.1. See UN 1012.
 - cis-2-butylene: Class 2.1. See UN 1012.
 - trans-2-butylene: Class 2.1. See UN 1012.