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Items 7 (d), (g), (n), (o), (p) and (r) of the provisional agenda

Other Regulations:

Regulation No. 19 (Front fog lamps)

Regulation No. 45 (Headlamp cleaners)

Regulation No. 98 (Headlamps with gas-discharge light sources)

Regulation No. 112 (Headlamps emitting an asymmetrical passing-beam)

Regulation No. 113 (Headlamps emitting a symmetrical passing-beam)

Regulation No. 123 (Adaptive front-lighting systems (AFS))

Proposal for a collective amendment to Regulations Nos. 19, 45, 98, 112, 113 and 123

Submitted by the expert from the International Automotive Lighting and Light Signalling Expert Group (GTB)*

The text reproduced below was prepared by the expert from GTB to correct the specification of the mixture for the dirty test in the headlamp Regulations. The modifications to the existing text of the Regulations are marked in bold for new or strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2014–2018 (ECE/TRANS/240, para. 105 and ECE/TRANS/2014/26, programme activity 02.4), the World Forum will develop, harmonize and update Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

I. Proposal

A. Supplement 9 to the 04 series of amendments to Regulation No. 19 (Front fog lamps):

Annex 5, paragraph 1.2.1.1.2., amend to read:

“1.2.1.1.2. For front fog lamp with the outside lens in plastic material:

The mixture of water and polluting agent to be applied to the front fog lamp shall be composed of:

- (a) 9 parts by weight of silica sand with a particle size of 0-100 μm ,
- (b) 1 part by weight of vegetal carbon dust produced from beech wood with a particle size of 0-100 μm ,
- (c) 0.2 part by weight of NaCMC⁴,
- (d) 5 parts by weight of sodium chloride (pure at 99 per cent),
- (e) 13 parts by weight of distilled water with a conductivity of $\leq 1 \text{ m}\mu\text{S/m}$, ~~and~~
- (f) ~~$\pm 1 \pm 1$ parts by weight~~ **drops of surface-actant surfactant**.⁵

The mixture ~~must~~ **shall** not be more than 14 days old.”

B. Supplement 10 to the 01 series of amendments to Regulation No. 45 (Headlamp cleaners):

Annex 4, paragraph 2.1.2., amend to read:

“2.1.2. For headlamp with the outside lens in plastic material:

The mixture of water and polluting agent to be applied to the headlamp shall be composed of:

- (a) 9 parts by weight of silica sand with a particle size of 0-100 μm ,
- (b) 1 part by weight of vegetable carbon dust produced from beech wood with a particle size of 0-100 μm ,
- (c) 0.2 part by weight of NaCMC¹,
- (d) 5 parts by weight of sodium chloride (pure at 99 per cent),
- (e) 13 parts by weight of distilled water with a conductivity of $\leq 1 \text{ m}\mu\text{S/m}$, ~~and 2 ± 1 parts by weight of surface-actant~~.²
- (f) ~~2 ± 1 parts by weight~~ **drops of surface-actant surfactant**.²”

C. Supplement 8 to the 01 series of amendments to Regulation No. 98 (Headlamps with gas-discharge light sources):

Annex 4, paragraph 1.2.1.1.2., amend to read:

“1.2.1.1.2. For headlamp with outside lens in plastic material:

The mixture of water and polluting agent to be applied to the headlamp shall be composed of:

- (a) 9 parts by weight of silica sand with a particle size of 0-100 µm,
- (b) 1 part by weight of vegetal carbon dust produced from beech wood with a particle size of 0-100 µm,
- (c) 0.2 part by weight of NaCMC³,
- (d) 5 parts by weight of sodium chloride (pure at 99 per cent),
- (e) 13 parts by weight of distilled water with a conductivity of $\leq 1 \text{ m}\mu\text{S/m}$, and ~~2 ± 1 parts by weight of surface actant.~~⁴
- (f) ~~2 + 1 parts by weight~~ **drops of surface-actant surfactant.**⁴

The mixture ~~must~~ **shall** not be more than 14 days old.”

D. Supplement 7 to the 01 series of amendments to Regulation No. 112 (Headlamps emitting an asymmetrical passing-beam):

Annex 4, paragraph 1.2.1.1.2., amend to read:

1.2.1.1.2. For headlamp with the outside lens in plastic material:

The mixture of water and polluting agent to be applied to the headlamp shall be composed of:

- (a) 9 parts by weight of silica sand with a particle size of 0-100 µm,
- (b) 1 part by weight of vegetal carbon dust produced from beech wood with a particle size of 0-100 µm,
- (c) 0.2 part by weight of NaCMC³,
- (d) 5 parts by weight of sodium chloride (pure at 99 per cent),
- (e) 13 parts by weight of distilled water with a conductivity of $\leq 1 \text{ m}\mu\text{S/m}$, and ~~2 ± 1 parts by weight of surface actant.~~⁴
- (f) ~~2 + 1 parts by weight~~ **drops of surface-actant surfactant.**⁴

The mixture shall not be more than 14 days old.”

E. Supplement 7 to the 01 series of amendments to Regulation No. 113 (Headlamps emitting a symmetrical passing-beam):

Annex 4, paragraph 1.2.1.1.2., amend to read:

“1.2.1.1.2. For headlamp with the outside lens in plastic material:

The mixture of water and polluting agent to be applied to the headlamp shall be composed of:

- (a) 9 parts by weight of silica sand with a particle size of 0-100 µm,
- (b) 1 part by weight of vegetal carbon dust produced from beech wood with a particle size of 0-100 µm,
- (c) 0.2 part by weight of NaCMC³,
- (d) 5 parts by weight of sodium chloride (pure at 99 per cent),

- (e) 13 parts by weight of distilled water with a conductivity of $\leq 1 \text{ m}\mu\text{S/m}$, ~~and 2 ± 1 parts by weight of surface-actant.~~⁴
- (f) ~~2 + 1 parts by weight~~ **drops of surface-actant surfactant.**⁴

The mixture shall not be more than 14 days old.”

F. Supplement 8 to the 01 series of amendments to Regulation No. 123 (Adaptive front lighting systems (AFS)):

Annex 4, paragraph 1.2.1.2., amend to read:

- “1.2.1.2. For a system or parts thereof with the outside lens in plastic material, the mixture of water and polluting agent to be applied to the test sample shall be composed of:
- (a) 9 parts by weight of silica sand with a particle size of 0-100 μm ,
 - (b) 1 part by weight of vegetal carbon dust produced from beech wood with a particle size of 0-100 μm ,
 - (c) 0.2 part by weight of NaCMC⁵,
 - (d) 5 parts by weight of sodium chloride (pure at 99 per cent),
 - (e) 13 parts by weight of distilled water with a conductivity of less than $\leq 1 \text{ m}\mu\text{S/m}$, ~~and~~
 - (f) ~~2 + 1 parts by weight~~ **drops of surface-actant surfactant.**⁶”

II. Justification

1. A review of the provisions concerning the specification of the mixture for the dirt test was undertaken in the work of the Informal Working Group "Simplification of the Lighting and Light-Signalling Regulations (IWG SLR). This revealed a problem caused by the decision of GRE at its seventy-second session to reverse an amendment to Regulation No. 45 (Supplement 9 to the 01 series of amendments dated 8 October 2015).

2. The problem is that currently all of the Regulations refer to the specification of the test mixture with a requirement for “2 + 1 parts by weight of surfactant”. The GTB Photometry Working Group identified that this requirement results in an excessive quantity of surfactant that renders testing invalid. For the disposal of the surface tension only a small amount of surfactant is necessary with 1 to 3 drops being sufficient. Even though the mass of a drop is not defined it is a common unit for such liquids (for example, medicine) and need not be defined because the influence on the resulting mixture is negligible for only a few drops.

3. Investigation of the origin of this problem revealed that the requirement of “ 2 ± 1 parts by weight” was in force until Regulation No. 45 was amended to specify “drops” in 2009 by ECE/TRANS/WP.29/2009/21. This amendment was proposed by GTB in ECE/TRANS/WP.29/GRE/2008/42 and this is where the “parts by weight” that had existed for many years was changed to “drops”. Unfortunately, the same change to the other Regulations (Nos. 19, 98,112, 113 and 123) to align the specification of the test mixture had not been introduced. However, as the laboratories were using the same mixture based upon Regulation No. 45 specification, for all testing this omission to amend the other Regulations was not identified. It is only as a consequence of Supplement 9 to the 01 series

of amendments to Regulation No. 45 that the problem was identified by one of the Technical Services while carrying out a type approval according to Regulation No. 45.

4. Although the Regulations should be amended at the earliest opportunity, to avoid confusion over the requirements for type approval and routine testing, it is understood that consideration would need to be given to introduce the aligned text directly into the simplified Regulations being developed by IWG SLR. However, there is an urgent need to correct the requirement in Regulation No. 45. To this end, it is suggested that GRE adopts the proposed amendment (correction) to Regulation No.45 for immediate transmission to the World Forum (WP.29).
