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

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Sub-Committee of Experts on the Transport of Dangerous Goods

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Geneva, 22 – 26 June 2015 Item 2 (i) of the provisional agenda

Explosives and related matters: Miscellaneous

Transport provisions for UN0501 propellant, solid 1.4C

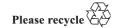
Transmitted by the expert from the United States of America

Introduction

1. The 15th Joint International Conference of the International Group of Experts on the Explosion Risks of Unstable Substances Explosives, Pyrotechnics and Propellants Working Group and the Chief Inspectors of Explosives recently considered the physical characteristics of division 1.4C "Propellant, Solid" and "Powder, Smokeless" with the view of determining comparative risk to better standardize modal transport conditions amongst 1.4C materials.

Discussion

- 2. An examination of existing transport requirements for division 1.4C dangerous goods has indicated that the entry for UN0501 "Propellant, solid" is unique among the entries for division 1.4C in regards to the maximum quantities that may be offered for transportation in one package by cargo aircraft only. A review of the existing fourteen division 1.4C dangerous goods (see figure 1 for a complete list) revealed that only UN0501 "Propellant, solid" is forbidden for transport on cargo aircraft, whereas the other thirteen division 1.4C dangerous goods are allowed to be offered for transportation by cargo aircraft up to 75 kg per package.
- 3. Of the fourteen division 1.4C dangerous goods list entries, there are two that cover materials which would be expected to exhibit substantially similar physical characteristics (UN0501 "Propellant, solid", and the more specific UN0509 "Powder, smokeless"), yet have differing transport provisions. In addition, the generic entry UN0479 "Substance, explosive, n.o.s" may be expected to have the most conservative transport provisions compared to other 1.4C entries, yet only UN0501 is forbidden for transport by cargo aircraft.
- 4. It is the view of the expert from the United States that "Powder, smokeless" is a specific type of "Propellant, solid" containing nitrocellulose as an essential ingredient, and that the division 1.4C "Propellant, solid" and "Powder, smokeless" characteristics are substantially similar.



5. It is requested that the Working Group on Explosives discuss the physical characteristics of UN0501 and UN0509 and consider whether there is any rationale for UN0501 having modal transport conditions that differ from the substantially similar UN0509 entry. The results of the discussion could be included in the report of the working group and made available to interested modes as appropriate.

| | Hazard | Identific- | Quantity Limitations | |
|--|----------|------------|-----------------------------|-----------|
| Dangerous goods descriptions and proper shipping names | class or | ation | | |
| | Division | Number | Passenger | Cargo |
| 5-Mercaptotetrazol-1-acetic acid | 1.4C | UN0448 | Forbidden | 75 kg |
| Articles, explosive, n.o.s. | 1.4C | UN0351 | Forbidden | 75 kg |
| Cartridges for weapons, blank or Cartridges, small arms, blank | 1.4C | UN0338 | Forbidden | 75 kg |
| Cartridges for weapons, inert projectile or Cartridges, small arms | 1.4C | UN0339 | Forbidden | 75 kg |
| Cartridges, oil well | 1.4C | UN0278 | Forbidden | 75 kg |
| Cartridges, power device | 1.4C | UN0276 | Forbidden | 75 kg |
| Cases, cartridges, empty with primer | 1.4C | UN0379 | Forbidden | 75 kg |
| Cases, combustible, empty, without primer | 1.4C | UN0446 | Forbidden | 75 kg |
| Charges, propelling | 1.4C | UN0491 | Forbidden | 75 kg |
| Model rocket motor | 1.4C | NA0276 | Forbidden | 75 kg |
| Powder, smokeless | 1.4C | UN0509 | Forbidden | 75 kg |
| Propellant, solid | 1.4C | UN0501 | Forbidden | Forbidden |
| Rockets, with expelling charge | 1.4C | UN0438 | Forbidden | 75 kg |
| Substances, explosive, n.o.s. | 1.4C | UN0479 | Forbidden | 75 kg |
| Tetrazol-1-acetic acid | 1.4C | UN0407 | Forbidden | 75 kg |

Figure 1
1.4C Dangerous Goods List Entries (Source: 2015-2016 ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air)
