

**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**

**4 July 2022**

**Sixtieth session**

Geneva, 27 June-6 July 2022

Item 14 of the agenda

**Other business**

## **Request for assistance with approvals for use of flexible-tanks and flexible pillow-bags for use to transport diesel**

### **Reference to informal documents IN.76 (49<sup>th</sup> session) and INF7 (49<sup>th</sup> session)**

#### **Background and introduction**

##### **Submitted by Responsible Packaging Management Association of Southern Africa (RPMASA)**

1. RPMASA was approached very recently by the Director General of the Association of Agribusiness in the Ukraine who in seeking solutions to their urgent need for increased supply of diesel by road, to assist with their harvesting. He had searched various websites and seen RPMASA 2015 INF76 requesting consideration to be given by the Sub Committee to provide packaging test requirements and conditions for certification and authorisation of these large packagings, as they were being used in Africa and possibly other regions.

At the time this was not supported by the Sub-Committee.

2. With the current challenge of no viable use of sea routes, the Association are exporting grain and sunflower oil by road to neighbouring countries, and would like to maximise the use of transport through use of the return journey to transport diesel for agricultural purposes. In their research it was noted that flexitanks could be the solution, but as the Ukraine is a Member of ADR wanted to be sure that these packagings are approved and meet requirements, however there are currently no such specifications / certifications in ADR for these types of packagings. The Association then sent a proposal to the ADR Committee for a Multi-lateral Agreement - Annex 1. There was limited support for this probably due to being of limited interest or no impact to most ADR countries. A zoom meeting was held on Wednesday 29th June with the Director General of the Association and representatives of the UK, USA and Poland to clarify their needs and explore possibilities.

3. Since 2016, there has been a large increase in use of these packagings as economic bulk liquid solutions, and with the challenges of climate change and SDG's to provide more sustainable transport systems, especially by road and rail in providing the opportunity for return trips of a different liquid product e.g. fruit juice, vegetable oils or wine one way and return trip with fuel in a different liner or bladder, with the additional opportunity to include the empty for re-filling.

4. Flexitanks and flexibags vary from the liner in a composite IBC to a "pillow" type Flexi-bag to the Flexi bladder in a 20foot shipping container, or flexitank, and are used for a variety of bulk transport solutions including food, juice, beverages, wine, non-hazardous chemicals, and fuels. There are a number of manufacturer's who supply these.

5. Globally Manufacturers include -  
**China**, Anthente - <http://en.anthente.net/index.html>  
FTS Container packaging - <https://www.flexitank-container.com/new/new-23-539.html>  
**Netherlands**, [https://wiefferink.nl/en/flexitank-engels/#pll\\_switcher](https://wiefferink.nl/en/flexitank-engels/#pll_switcher)  
**South Africa**, FTS flexitank Systems <https://www.flexitanksystems.com/tpu-specifications/> and <https://www.flexitanksystems.com/transportable-bladder-tanks/>  
**USA**, Safe Rack - <https://www.saferack.com/glossary/flexitank/> and TechnoGroup  
-<https://www.technogroupusa.com/services/technotanks-flexitanks-flexibags/>  
Specifications for these inflatable tanks/bags are available on the websites and are tough.
6. Manufacturers claims include – “Many companies are now getting **FREE** Diesel and Paraffin transport by using unutilized empty back-hauls with our Flexitank Systems Diesel Bladder tanks. Flatbeds, drop-side, and Tipper truck trailers or railcars are using our Harnessed fuel tanks to transport fuel all over Africa. From Beira to Tete, Walvis-bay to Kimberly and Northern cape to Port Elizabeth.” The possibilities are endless – they are even used for transport of aviation fuel and fuel in aircraft as shown on at least 1 website!.
7. In searching the various websites, they state they have certifications, these mainly appear to Management System Certifications such as ISO 9001, ISO 14001, HACCP etc, we were not able to find a Dangerous Goods approval!
8. However, these types of packages are in use and have been used safely for many years following compatibility tests, both by the military and Industry, thus we believe it would be appropriate in terms of safe, sustainable transport to set conditions for compliance.
9. Unique situations such as currently facing the Ukraine Agricultural sector require unique solutions. As there are no current packaging assignments for these types of packagings for use with fuel and more specifically diesel, yet they are being used safely in various transport modes and regions, we believe it is time for the Sub Committee to consider formalizing them.
10. There is however a more pressing issue to address in the current request from the Agribusiness Association which could possibly in the shorter term be addressed through bi-lateral or multi-lateral agreements between the neighbouring countries?

## Proposal

11. RPMASA invites experts to provide comments assist with –
  - (a) Finding an urgent solution for the Ukraine Agri-business
  - (b) Providing a longer-term solution/s through setting conditions for continued use of flexible-tanks and bags for use with fuels such as diesel, with appropriate assignment of packing instructions and test requirements.
  - (c) Assist with the SDG’s by providing more sustainable use of multi-modal systems

Attached Annex 1 the Ukrainian Agribusiness Association proposed draft Multi-lateral Agreement – they informed that the specification parameters included in this came from the USA Military, and that they do have the capability to produce these locally.

## Annex

### Multilateral Agreement

#### Under paragraph 1.5.1 of ADR, concerning transportation of UN 1202 diesel fuel in flexible tanks

1. By derogation from paragraph 3.2.1 and taking into account paragraph 4.1.3.8 transportation of UN 1202 diesel fuel in flexible fuel containment systems in the form of flexible tanks may be carried with the following requirements:

1. flexible tanks must meet the following technical parameters:
  - (a) maximum volume - not more than 24,000 liters in the case of transportation in 20-foot metal containers and not more than 12,000 liters in the case of transportation in the body or on the platform of the transport unit;
  - (b) made of a material that is a combination of fabric coated with thermoplastic polyurethane (TPU) and is resistant to diesel fuel, ultraviolet radiation, moisture;
  - (c) material density - not less than 1000 g / sq.m;
  - (d) tear strength of material - not less than 134 N (Newton);
  - (e) puncture resistance of material - not less than 1000 N (Newton);
  - (f) material thickness - not less than 1000 microns;
  - (g) resistance to temperatures - from -40° C to + 80° C;
  - (h) maximum working pressure - not less than 100 kPA (or 1 bar);
  - (i) all shutters, openings and other elements of the flexible tank must be sealed in such a way as to prevent loss of contents which could occur under normal conditions of carriage as a result of vibration or changes in temperature, humidity or pressure (eg due to altitude changes);
2. when transporting diesel fuel, flexible tanks must:
  - (a) be placed and secured in the transport unit or container in such a way that during transportation there is no leakage of dangerous goods from the flexible tank or its movement;
  - (b) be secured with the secondary containment of dangerous goods within the container or transport unit, which in case of damage to the flexible tank will prevent leakage of its contents;
  - (c) accompanied by documentation from the manufacturer of the flexible tank or its representative (technical passport, operating instructions, certificate, etc.), which contains information on the technical parameters of the flexible tank which allows to determine its compliance with the requirements of paragraph 1), date of manufacture, warranty ;
  - (d) have inerasable marking in Ukrainian and English, indicating the date of manufacture, name and location of the manufacturer and / or company that performs its functions of accepting claims from the consumer, as well as repairs and maintenance, country of manufacture, maximum and dimensions of the flexible tank in the filled state.
3. All other relevant provisions of ADR shall apply.

4. This agreement shall be valid until 30 June 2025 for carriage on the territories of those ADR Contracting Parties signatory to this agreement. If it is revoked before then by one of the signatories, it shall remain valid until the above-mentioned date only for carriage on the territories of those ADR Contracting Parties signatory to this agreement which have not revoked it.

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