

INLAND TRANSPORT COMMITTEEWorking Party on the Transport of Dangerous Goods

(Eighty-third session,

Geneva, 5-9 November 2007)

Devices for additives in tank-vehiclesAdditional information to ECE/TRANS/WP.15/2007/22 (Austria)Transmitted by the Government of Austria

Additives are substances that are intended to improve the qualities of the products supplied to the customer. For UN 1202 HEATING OIL, LIGHT e.g. these are specifically antifreeze, anti-soot and improvement of the burning behaviour. Such additives may be hazardous goods. There are various additives that may be added at a mixing ratio depending on the product and/or customer's request.

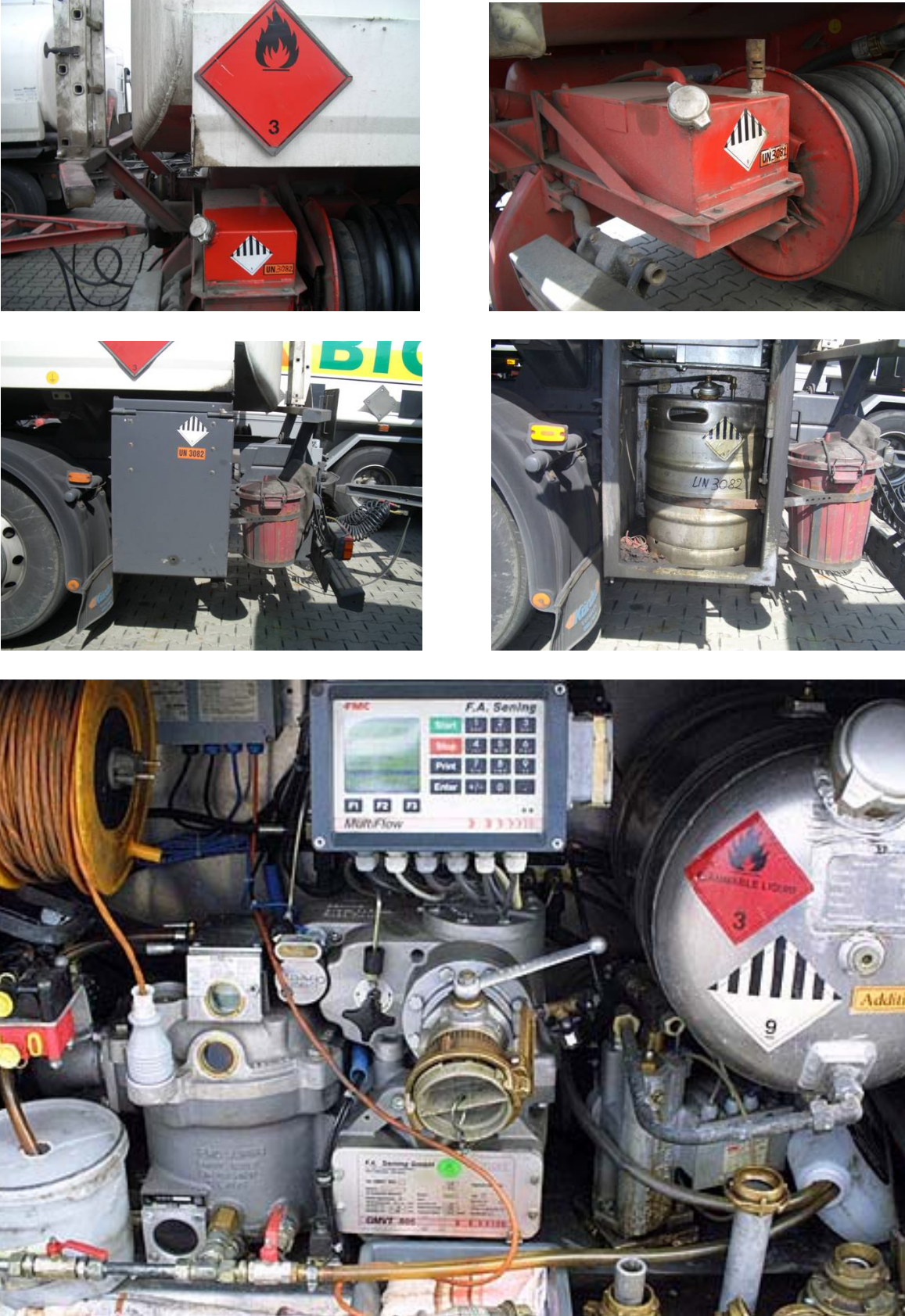
In the past additives (in addition to the transport of the product in tanks) were carried in packages on board of the tank-vehicle and filled manually into the customer's tank by the driver. Mixing with the product happened when the product was discharged into the customer's tank. This procedure however led to a number of problems, e.g. improper mixing ratio, insufficient mixing, spilling of additives at the customer's. Drivers often faced legal problems when they opened LQ-packages, removed inner packagings with additives and could not re-establish the condition according to chapter 3.4 for further transport.

Therefore, the industry developed so-called additive devices.

As shown in the photos below, the additive is contained in a receptacle on the tank-vehicle which is neither a tank compartment nor a fixed tank itself. During discharging of the tank the additive is mixed to the product by an automatic dosing device (e.g. a dosing pump). Mixing is regularly done in the discharge piping system before flow metering devices (normally volume metering devices). Such dosing devices offer a wide range of mixing ratios (typically 1 : 500 to 1 : 4000 up to a maximum product flow of 700 l/min). For viscous additives the additive device may be equipped with a temperature controlled heating.

To serve their purpose additive devices have to be permanently incorporated into the discharging device of the tank. Therefore, they are currently often treated as part of the service equipment of the tank as well. This ensures that they have to fulfil the same requirements for design, operating and inspecting and as a consequence that tank vehicles with such equipment meet the same safety level as others.

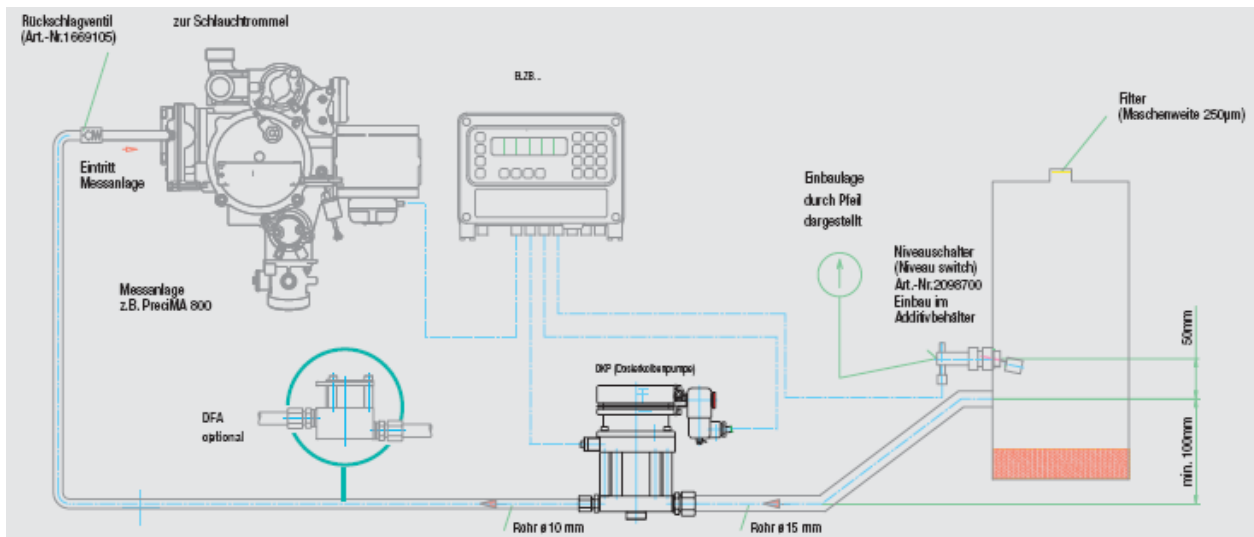
If ADR explicitly shares this interpretation, authorities, enforcement bodies, manufacturers and users of additive devices will in the future have the necessary legal certainty.



Picture 1 - 5: Examples for tank-vehicles with additive system



Picture 5: Additive device installed according to the simplified diagram below



Rückschlagventil zur Schlauchtrommel
Eintritt Messanlage
Messanlage (z.B. PreciMA 800)
DFA optional
DVP (Dosierkolbenpumpe)
Rohr Ø 10 mm
Rohr Ø 15 mm
Einbaulage durch Profil dargestellt
Niveauschalter
Einbau im Additivbehälter
Filter (Maschenweite 250µm) min. 100mm

Non-return valve to hose drum
Inlet measuring system
Measuring system(e.g. PreciMA 800)
DFA optional
DVP (dosing piston pump)
Pipe Ø 10 mm
Pipe Ø 15 mm
Installed position represented in profile
Level switch
Installation in additive receptacle
Filter (mesh aperture 250µm) min. 100mm

Picture 6: Simplified diagram of an additive device (source: Schrader Fahrzeugbau GmbH & Co.KG)