



PACKING INSTRUCTION 950

OPERATOR VARIATIONS: AC-04 AC-05 AM-09 AS-05 KE-06 ME-04 MH-12

This instruction applies to UN 3166 **Engine, internal combustion, flammable liquid powered, Engine, fuel cell, flammable liquid powered, Vehicle, flammable liquid powered** and **Vehicle, fuel cell, flammable liquid powered** on passenger aircraft and Cargo Aircraft Only (see PI 951 for **Engine, internal combustion, flammable gas powered, Engine, fuel cell, flammable gas powered, Vehicle, flammable gas powered** and **Vehicle, fuel cell, flammable gas powered**).

Vehicles, machines or equipment containing internal combustion engines or fuel cell engines powered by a flammable liquid must meet the following requirements:

- (a) **Flammable liquid fuel tanks.** Except as otherwise provided for in this Packing Instruction, fuel tanks must be drained of fuel and tank caps fitted securely. Special precautions are necessary to ensure complete drainage of the fuel system of vehicles, machines or equipment incorporating internal combustion engines, such as lawn mowers, outboard motors, etc., where such machines or equipment could possibly be handled in other than an upright position. When it is not possible to handle in other than an upright position, vehicles, except those with diesel engines, must be drained of fuel as far as practicable and if any fuel remains it must not exceed one quarter of the tank capacity;
- (b) **Diesel engines.** Vehicles equipped with diesel engines are exempted from the requirement to drain the fuel tanks, provided that a sufficient ullage space has been left inside the tank to allow fuel expansion without leakage, and the tank caps are tightly closed. A careful check must be made to ensure there are no fuel leakages;
- (c) **Batteries.** All batteries must be installed and securely fastened in the battery holder of the vehicle, machinery or equipment and be protected in such a manner as to prevent damage and short circuits. In addition:
 - 1. if spillable batteries are installed, and it is possible for the vehicle, machine or equipment to be handled in such a way that batteries would not remain in their intended orientation, they must be removed and packed according to Packing Instruction 492 or 870, as applicable;
 - 2. if lithium batteries are installed, they must be of a type that has successfully passed the tests specified in the *UN Manual of Tests and Criteria, Part III, subsection 38.3*, unless otherwise approved by the appropriate national authority of the State of origin, must be securely fastened in the vehicle, machinery or equipment and must be protected in such a manner as to prevent damage and short circuits;
 - 3. if sodium batteries are installed they must conform to the requirements of Special Provision A94.
- (d) **Other operational equipment:**
 - 1. dangerous goods required for the operation of the vehicle, machine or equipment, such as fire extinguishers, tire inflation canisters, safety devices, etc., must be securely mounted in the vehicle, machine or equipment. Aircraft may also contain other articles and substances which would otherwise be classified as dangerous goods but which are installed in that aircraft in accordance with the pertinent airworthiness requirements and operating regulations. If fitted, life-rafts, emergency escape slides and other inflation devices must be protected such that they cannot be activated accidentally. Vehicles containing dangerous goods identified in Subsection 4.2—List of Dangerous Goods as forbidden on passenger aircraft may only be transported on cargo aircraft;
 - 2. vehicles equipped with theft-protection devices, installed radio communications equipment or navigational system must have such devices, equipment or system disabled.

Note:

Replacements for the dangerous goods permitted in paragraphs (c) and (d) must not be carried under this packing instruction.

Internal combustion or fuel cell engines shipped separately (not installed)

When internal combustion engines or fuel cell engines are being shipped separately, all fuel, coolant or hydraulic systems remaining in or on the engine must be drained as far as practicable and all disconnected fluid pipes must be sealed with leak-proof caps, which are positively retained.

This requirement also applies to vehicles, machines or equipment containing internal combustion engines or fuel cell engines that are being shipped in a dismantled state such that fuel lines have been disconnected.

UN number	Total quantity Passenger aircraft	Total quantity Cargo Aircraft Only
UN 3166, Engine, internal combustion, flammable liquid powered, Engine, fuel cell, flammable liquid powered, Vehicle, flammable liquid powered or Vehicle, fuel cell, flammable liquid powered	No limit	No limit