Dangerous Goods Regulations 2012 - Identification

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Dangerous Goods Regulations 53rd Edition

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						Passenger and Cargo Aircraft				Cargo only			
						Ltd Qty							
UN/ID no.	Proper Shipping Name/Description	Class or Div. (Subrisk)	Hazard Labels	PG	EQ (see 2.7)	Pkg Inst	Max Net Qty/Pkg	Pkg Inst	Max Net Qty/Pkg	Pack Inst	Max Net Qty/Pkg	Spec. Prov.	ERG Code
A	B	C	D	E	F	G	H	I	J	K	L	M	N
3164	**Articles, pressurized, hydraulic containing non-flammable gas**	2.2	Non-flammable Gas		E0	**Forbidden**	Forbidden	208	No Limit	208	No Limit	A48 A114	2L
3164	**Articles, pressurized, pneumatic containing non-flammable gas**	2.2	Non-flammable Gas		E0	**Forbidden**	Forbidden	208	No Limit	208	No Limit	A48 A114	2L
3166	**Engine, fuel cell, flammable gas powered †**	9	Miscellaneous		E0	**Forbidden**	Forbidden	**Forbidden**	Forbidden	951	No Limit	A67 A70 A87 A134 A176	9L
3166	**Engine, fuel cell, flammable liquid powered †**	9	Miscellaneous		E0	**Forbidden**	Forbidden	950	No Limit	950	No Limit	A67 A70 A87 A134 A176	9L
3166	**Engine, internal combustion, flammable gas powered**	9	Miscellaneous		E0	**Forbidden**	Forbidden	**Forbidden**	Forbidden	951	No Limit	A67 A70 A87 A134	9L
3166	**Engine, internal combustion, flammable liquid powered**	9	Miscellaneous		E0	**Forbidden**	Forbidden	950	No Limit	950	No Limit	A67 A70 A87 A134	9L

Packing Instructions — Class 9 — Miscellaneous Dangerous Goods

PACKING INSTRUCTION 951

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

This instruction applies to UN 3166 **Engine, internal combustion, flammable gas powered**, **Engine, fuel cell, flammable gas powered**, **Vehicle, flammable gas powered** and **Vehicle, fuel cell, flammable gas powered** on Cargo Aircraft Only (see PI 950 for Engine, internal combustion, flammable liquid powered, Engine, fuel cell, flammable liquid powered, Vehicle, flammable liquid powered and Vehicle, fuel cell, flammable liquid powered).

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

(a) Flammable gas pressure vessels (fuel tanks):

1. For flammable gas powered vehicles, machines or equipment, pressurised vessels containing the flammable gas must be completely emptied of flammable gas. Lines from vessels to gas regulators, and gas regulators themselves must also be drained of all trace of flammable gas. To ensure that these conditions are met, gas shut-off valves must be left open and connections of lines to gas regulators must be left disconnected upon delivery of the vehicle to the operator. Shut-off valves must be closed and lines reconnected at gas regulators before loading the vehicle aboard the aircraft;

   or alternatively,

2. Flammable gas powered vehicles, machines or equipment which have pressure receptacles (fuel tanks) that are equipped with electrically operated valves which close automatically in case the power is disconnected or with manual shut-off valves, may be transported under the following conditions:

   (i) the tank shut-off valves must be in the closed position and in the case of electrically operated valves, power to those valves must be disconnected;

   (ii) after closing the tank shut-off valves, the vehicle, equipment or machinery must be operated until it stops from lack of fuel before being loaded aboard the aircraft;

   (iii) in no part of the closed system must the remaining pressure of compressed gases exceed 5% of the maximum allowable working pressure of the pressure receptacle (fuel tank) system, or more than 2,000 kPa (20 bar), whichever is the lower;

   (iv) there must not be any residual liquefied gas in the system including the fuel tank.

(b) 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.

(c) 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.

(d) In the event that vehicles, machines or equipment containing internal combustion engines are being shipped in a dismantled state such that fuel lines have been disconnected, those fuels lines must be sealed securely.

Note:
Replacements for the dangerous goods permitted in paragraphs (b) and (c) 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 gas powered, Engine, fuel cell,**		

flammable gas powered, Vehicle, flammable gas powered or **Vehicle, fuel cell, flammable gas powered**	Forbidden	No limit

Waybill is issued.

A70 Internal combustion or fuel cell engines, being shipped either separately or incorporated into a vehicle, machine or other apparatus, the fuel tank of which has never contained any fuel and the fuel system of which is completely empty of fuel or that are powered by a fuel that does not meet the classification criteria for any class or division and without batteries or other dangerous goods, are not subject to these Regulations.

Flammable gas powered internal combustion or fuel cell engines being shipped without batteries or other dangerous goods either separately or incorporated into a vehicle, machine or other apparatus that have contained fuel but have been flushed, purged and filled with a non-flammable gas or fluid to nullify the hazard are not subject to these Regulations provided that:

(a) the shipper has made prior arrangements with the operator;

(b) the shipper has provided the operator with written or electronic documentation stating that the flushing, purging and filling procedure has been followed and that the final contents of the engine(s) have been tested and verified to be non-flammable; and

(c) the final pressure of the non-flammable gas used to fill the system does not exceed 200 kPa at 20°C.

Multiple engines meeting the provisions of this special provision may be shipped in a unit load device or other type of pallet provided that the shipper has made prior arrangements with the operator(s) for each consignment.

When this special provision is used, the words “Not Restricted” and the Special Provision number must be included in the description of the substance on the Air Waybill as required by 8.2.6, when an Air Waybill is issued.

A71 (38) This substance is not subject to these Regulations when it contains 0.1% or less calcium carbide.

A72 (163) A substance specifically listed by name in the List of Dangerous Goods must not be transported under this entry. Materials transported under this entry may contain 20% or less nitrocellulose provided the nitrocellulose contains 12.6% or less nitrogen.

A73 (237) The membrane filters, including paper separators, coating, or backing materials, etc. that are present in transport, must not be liable to propagate a detonation as tested by one of the tests described in the *UN Manual of Tests and Criteria, Part I, Test Series 1(a)*.

In addition, the appropriate authority may determine, on the basis of the results of suitable burning rate tests taking account of the standard tests in the *UN Manual of Tests and Criteria, Part III, subsection 33.2.1*, nitrocellulose membrane filters in the form in which they are to be transported are not subject to the provisions of these Regulations applicable to flammable solids in Division 4.1.

A74 (169) Phthalic anhydride in the solid state and tetrahydrophthalic anhydrides, with 0.05% or less maleic anhydride, are not subject to these Regulations. Phthalic anhydride molten at a temperature above its flash point, with 0.05% or less maleic anhydride, must be classified under UN 3256.

A75 Articles such as sterilization devices, when containing less than 30 mL per inner

A132 (204) Articles containing smoke-producing substance(s), corrosive, according to the criteria for Class 8 must be labelled with a "Corrosive" subsidiary risk label.

A133 (311) Substances must not be transported under this entry unless approved by the appropriate national authority on the basis of the results of appropriate tests according to Part I of the UN Manual of Tests and Criteria. Packaging must ensure that the percentage of diluent does not fall below that stated in the appropriate authority approval at any time during transport.

A134 (312) Vehicles or machinery powered by a fuel cell engine must be consigned under the entries UN 3166 **Vehicle, fuel cell, flammable gas powered** or UN 3166 **Vehicle, fuel cell, flammable liquid powered**, or UN 3166 **Engine, fuel cell, flammable gas powered** or UN 3166 **Engine, fuel cell, flammable liquid powered**, as appropriate. These entries include hybrid electric vehicles powered by both a fuel cell and an internal combustion engine with wet batteries, sodium batteries or lithium batteries, transported with the battery(ies) installed.

Other vehicles which contain an internal combustion engine must be consigned under the entries UN 3166 **Vehicle, flammable gas powered** or UN 3166 **Vehicle, flammable liquid powered**, as appropriate. These entries include hybrid electric vehicles powered by both an internal combustion engine and wet batteries, sodium batteries or lithium batteries, transported with the battery(ies) installed.

A135 Not used.

A136 (314) These substances are liable to exothermic decomposition at elevated temperatures. Decomposition can be initiated by heat or by impurities (e.g. powdered metals (iron, manganese, cobalt, magnesium) and their compounds).

During the course of transport, these substances must be shaded from direct sunlight and all sources of heat and be placed in adequately ventilated areas.

A137 (315) This entry must not be used for Division 6.1 substances that meet the inhalation toxicity criteria for Packing Group I described in 3.6.1.5.3.2.

A138 (316) This entry applies only to calcium hypochlorite, dry, when transported in non friable tablet form.

A139 (317) "Fissile-excepted" applies only to those packages complying with section 10.6.2.8.

A140 (318) Notwithstanding the "★" against the proper shipping name in Column B, the technical names need not be shown on the package. When the infectious substances to be transported are unknown, but suspected of meeting the criteria for inclusion in Category A and assigned to UN 2814 or UN 2900, the words "suspected category A infectious substance" must be shown, in parentheses, following the proper shipping name on the Shipper's Declaration for Dangerous Goods, but not on the outer packagings.

A141 Not used.

A142 Not used.

A143 (321) These storage systems must always be considered as containing hydrogen.

A144 Protective Breathing Equipment (PBE) containing a small chemical oxygen