

SPECIAL PROVISIONS

<p>A41</p>	<p>Permeation devices that contain dangerous goods and that are used for calibrating air quality monitoring devices are not subject to these instructions when carried as cargo provided the following requirements are met:</p> <ul style="list-style-type: none"> a) Each device must be constructed of a material compatible with the dangerous goods it contains; b) The total content of dangerous goods in each device is limited to 2 millilitres and the device must not be liquid full at 55°C; c) Each permeation device must be placed in a sealed, high impact-resistant, tubular inner packaging of plastic or equivalent material. Sufficient absorbent material must be contained in the inner packaging to completely absorb the contents of the device. The closure of the inner packaging must be securely held in place with wire, tape or other positive means; d) Each inner packaging must be contained in a secondary packaging constructed of metal, or plastic having a minimum thickness of 1.5 mm. The secondary packaging must be hermetically sealed; e) The secondary packaging must be securely packed in strong outer packaging. The completed package must be capable of withstanding, without breakage or leakage of any inner packaging and without significant reduction in effectiveness: <ul style="list-style-type: none"> i) the following free drops onto a rigid, non-resilient, flat and horizontal surface from a height of 1.8 m: <ul style="list-style-type: none"> - one drop flat on the bottom; - one drop flat on the top; - one drop flat on the long side; - one drop flat on the short side; - one drop on a corner at the junction of three intersecting edges; and ii) a force applied to the top surface for a duration of 24 hours, equivalent to the total weight of identical packages if stacked to a height of 3 m (including the test sample). <i>Note: Each of the above tests may be performed on different but identical packages.</i> f) The gross mass of the completed package must not exceed 30 kg.
<p>A67</p>	<p>Batteries can be considered as non-spillable provided that they are capable of withstanding the vibration and pressure differential tests given below, without leakage of battery fluid.</p> <p><i>Vibration test:</i></p> <p>The battery is rigidly clamped to the platform of a vibration machine and simple harmonic motion having an amplitude of 0.8 mm (1.6 mm maximum total excursion) is applied. The frequency is varied at the rate of 1 Hz/min between the limits of 10 Hz to</p>

	<p>55 Hz. The entire range of frequencies and return is traversed in 95± 5 minutes for each mounting position (direction of vibration) of the battery. The battery must be tested in three mutually perpendicular positions (to include testing with fill opening and vents, if any, in an inverted position) for equal time periods.</p> <p><i>Pressure differential test:</i></p> <p>Following the vibration test, the battery is stored for six hours at 24°C ± 4°C while subjected to a pressure differential of at least 88 kPa. The battery must be tested in three mutually perpendicular positions (to include testing with fill openings and vents, if any, in an inverted position) for at least six hours in each position.</p> <p><i>Note: Non-spillable type batteries which are an integral part of, and necessary for the operation of, mechanical or electronic equipment must be securely fastened in the battery holder on the equipment and protected in such a manner so as to prevent damage and short circuits.</i></p> <p>Non-spillable batteries are not to be subject to these instructions when carried as cargo if, at a temperature of 55°C, the electrolyte will not flow from a ruptured or cracked case. The battery must not contain any free or unabsorbed liquid. Any electrical battery or battery powered device, equipment or vehicle having the potential of dangerous evolution of heat must be prepared for transport so as to prevent:</p> <ul style="list-style-type: none"> a) A short circuit (e.g. in the case of batteries, by the effective insulation of exposed terminals; or in the case of equipment, by disconnection of the battery and protection of exposed terminals); and b) Unintentional activation. <p>The words “not restricted” and the special provision number A67 must be provided on the air waybill when an air waybill is issued.</p>
A70	<p>Internal combustion or fuel cell engines or machinery being shipped either separately or incorporated into a vehicle, machine or other apparatus, without batteries or other dangerous goods, are not subject to Technical Instructions when carried as cargo, provided that:</p> <ul style="list-style-type: none"> a) for flammable liquid powered engines: <ul style="list-style-type: none"> 1) the engine is powered by a fuel that does not meet the classification criteria for any class or division; or 2) the fuel tank of the vehicle, machine or other apparatus has never contained any fuel or the fuel tank has been flushed and purged of vapours and adequate measures taken to nullify the hazard; and 3) the entire fuel system of the engine has no free liquid and all fuel lines are sealed or capped or securely connected to the engine and vehicle, machinery or apparatus. b) for flammable gas powered internal combustion or fuel cell engines: <ul style="list-style-type: none"> 1) the entire fuel system must have been flushed, purged and filled with a non-flammable gas or fluid to nullify the hazard;

	<p>2) the final pressure of the non-flammable gas used to fill the system does not exceed 200 kPa at 20°C;</p> <p>3) the shipper has made prior arrangements with the operator; and</p> <p>4) 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.</p> <p>Multiple engines may be shipped in a unit load device provided that the shipper has made prior arrangements with the operator(s) for each shipment.</p> <p>When this special provision is used, the words “not restricted” and the special provision number A70 must be provided on the air waybill when an air waybill is used.</p>
A123	<p>This entry applies to Batteries, electric storage, not otherwise listed in listed in Table 3-1 Dangerous Goods List of Technical Instructions. Examples of such batteries are: alkali-manganese, zinc-carbon and nickel-cadmium batteries. Any electrical battery or battery powered device, equipment or vehicle having the potential of a dangerous evolution of heat must be prepared for transport so as to prevent:</p> <p>a) a short-circuit (e.g. in the case of batteries, by the effective insulation of exposed terminals; or, in the case of equipment, by disconnection of the battery and protection of exposed terminals); and</p> <p>b) unintentional activation.</p> <p>The words “not restricted” and the special provision number A123 must be provided on the air waybill when an air waybill is used.</p>
A152	<p>Insulated packagings conforming to the requirements of Packing Instructions 202 containing refrigerated liquid nitrogen fully absorbed in a porous material are not subject to the Technical Instructions provided the design of the insulated packaging would not allow the build-up of pressure within the container and would not permit the release of any refrigerated liquid nitrogen irrespective of the orientation of the insulated packaging and any outer packaging or overpack used is closed in a way that will not allow the build-up of pressure within that packaging or overpack.</p> <p>When used to contain substances not subject to the Technical Instructions, the words “not restricted” and the special provision number A152 must be provided on the air waybill when an air waybill is used.</p>
A162	<p>Fuel cell cartridges containing hydrogen in a metal hydride transported under this entry must have a water capacity less than or equal to 120 mL.</p> <p>The pressure in the fuel cell cartridge must not exceed 5 MPa at 55°C. The design type must withstand, without leaking or bursting, a pressure of two (2) times the design pressure of the cartridge at 55°C or 200 kPa more than the design pressure of</p>

	<p>the cartridge at 55°C, whichever is greater. The pressure at which this test is conducted is referred to in the drop test and the hydrogen cycling test as the “minimum shell burst pressure”. Fuel cell cartridges must be filled in accordance with procedures provided by the manufacturer. The manufacturer must provide the following information with each fuel cell cartridge:</p> <ul style="list-style-type: none"> (a) inspection procedures to be carried out before initial filling and before refilling of the fuel cell cartridge; (a) safety precautions and potential hazards to be aware of; (b) method for determining when the rated capacity has been achieved; (c) minimum and maximum pressure range; (d) minimum and maximum temperature range; and (e) any other requirements to be met for initial filling and refilling including the type of equipment to be used for initial filling and refilling. <p>The fuel cell cartridges must be designed and constructed to prevent fuel leakage under normal conditions of transport.</p>
A178	<p>Security type equipment such as attaché cases, cash boxes, cash bags, etc., incorporating dangerous goods, for example lithium batteries, gas cartridges and/or pyrotechnic material, are not subject to the Technical Instructions if the equipment complies with the following:</p> <ul style="list-style-type: none"> a) The equipment must be equipped with an effective means of preventing accidental activation; b) If the equipment contains an explosive or pyrotechnic substance or an explosive article, this article or substance must be excluded from Class 1 by the appropriate national authority of the State of Manufacture in compliance with Part 2;1.5.2.1; c) If the equipment contains lithium cells or batteries, these cells or batteries must comply with the following restrictions: <ul style="list-style-type: none"> 1) For a lithium metal cell, the lithium content is not more than 1 g; 2) For a lithium metal or lithium alloy battery, the aggregate lithium content is not more than 2 g; 3) For lithium ion cells, the Watt-hour rating is not more than 20 Wh; 4) For lithium ion batteries, the Watt-hour rating is not more than 100 Wh; 5) Each cell or battery is of the type proven to meet the requirements of each test in the <i>UN Manual of Tests and Criteria</i>, Part III section 38.3; d) If the equipment contains gases to expel dye or ink, only gas cartridges and receptacles, small, containing gas with a capacity not exceeding 50 mL, containing no constituents subject to the Technical Instructions other than s Division 2.2 gas, are allowed. The release of gas must not cause extreme annoyance or discomfort to crew members so as to prevent the correct performance of assigned duties. In case of

	<p>accidental activation, all hazardous effects must be confined within the equipment and must not produce extreme noise.</p> <p>e) Security type equipment that is defective or that has been damaged is forbidden for transport.</p> <p>The words “not restricted” and the special provision number A178 must be provided on the air waybill when an air waybill is used.</p>
A180	<p>Non-infectious specimens, such as specimens of mammals, birds, amphibians, reptiles, fish, insects and other invertebrates containing small quantities of UN1170 (Ethanol / Ethanol solution, or Ethyl alcohol / Ethyl alcohol solution), UN1198 (Formaldehyde solution, flammable); UN1987 (Alcohols n.o.s.) or UN1219 (Isopropanol / Isopropyl alcohol) are not subject to the Technical Instructions provided the following packing and marking requirements are met:</p> <p>a) specimens are:</p> <ol style="list-style-type: none"> 1) wrapped in paper towel and/or cheesecloth moistened with alcohol, an alcohol solution or a formaldehyde solution and then placed in a plastic bag that is heat-sealed. Any free liquid in the bag must not exceed 30 mL; or 2) placed in vials or other rigid containers with no more than 30 mL of alcohol, an alcohol solution or a formaldehyde solution; <p>b) the prepared specimens are then placed in a plastic bag that is then heat-sealed;</p> <p>c) the bagged specimens are then placed inside another plastic bag with absorbent material then heat sealed;</p> <p>d) the finished bag is then placed in a strong outer packaging with suitable cushioning material;</p> <p>e) the total quantity of flammable liquid per outer packaging must not exceed 1 L; and</p> <p>f) the completed package is marked “scientific research specimens, not restricted Special Provision A180 applies”.</p> <p>The words “not restricted” and the special provision number A180 must be provided on the air waybill when an air waybill is used.</p>
A199	<p>Nickel-metal hydride batteries or nickel-metal hydride battery-powered devices, equipment or vehicles having the potential of a dangerous evolution of heat are not subject to the Technical Instructions provided they are prepared for transport so as to prevent:</p> <p>a) a short circuit (e.g. in the case of batteries, by the effective insulation of exposed terminals; or, in the case of equipment, by disconnection of the battery and protection of exposed terminals); and</p> <p>b) unintentional activation.</p>