



WORKING PAPER

**DANGEROUS GOODS PANEL (DGP)
MEETING OF THE WORKING GROUP OF THE WHOLE**

Atlantic City, United States, 4 to 8 April 2011

Agenda Item 2: Development of recommendations for amendments to the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284) for incorporation in the 2013-2014 Edition

**DANGEROUS GOODS NOT SUBJECT TO ALL OF THE REQUIREMENTS OF THE
TECHNICAL INSTRUCTIONS**

(Presented by G A Leach)

SUMMARY

This working paper seeks to clarify a number of areas in the Technical Instructions which refer to dangerous goods which are not subject to all of the requirements of the Instructions.

Action by the DGP-WG is in paragraph 2.

1. INTRODUCTION

1.1 At DGP-WG/10, WP/31 raised the issue of dangerous goods which are not subject to all of the requirements of the Technical Instructions (e.g. by way of a special provision). Specifically, discussion was invited on whether this wording actually meant that such dangerous goods were not subject to the requirements relating to passenger/crew baggage, post etc. Following discussion at WG/10 it became apparent that some dangerous goods may indeed not need to be subject to restrictions in baggage whilst others should only be excepted from the full requirements when carried in cargo.

1.2 Attached to this working paper are details of those areas which need to be considered. In the comments column suggestions have been made as to what should be done, although some of them need further debate. Generally, if the exception from the requirements is related to classification then there would appear to be no reason to prohibit the carriage by passengers or crew; if the exception is dependent on specific packing or documentation requirements it is suggested that it would be appropriate to restrict this to when carriage of the dangerous goods is as cargo.

2. **ACTION BY THE DGP-WG**

2.1 The DGP-WG is invited to consider the attached text and decide on the extent to which the applicable exception from the full requirements of the Technical Instructions applies.

APPENDIX

Reference in TI	Text	Comments
<p>Part 2, Chapter 2 - Class 2 Gasses</p>	<p>2.2.2 Gases of Division 2.2 are not subject to these Instructions if they are transported at a pressure less than 200 kPa at 20°C and are not liquefied or refrigerated liquefied gases. + 2.2.3 Gases of Division 2.2 are not subject to these Instructions when contained in the following: a) foodstuffs, including carbonated beverages (except UN 1950); b) balls intended for use in sports; c) tyres which meet the provisions of Special Provision A59; or d) light bulbs, provided they are packaged so that the projectile effects of any rupture of the bulb will be contained within the package.</p>	<p>Classification – no action required</p>
<p>Chapter 6 Classification of infectious substances</p>	<p>6.3.2.3.1 Substances which do not contain infectious substances or substances which are unlikely to cause disease in humans or animals are not subject to these Instructions unless they meet the criteria for inclusion in another class</p>	<p>Classification – no action required</p>
	<p>6.3.2.3.2 Substances containing micro-organisms which are non-pathogenic to humans or animals are not subject to these Instructions unless they meet the criteria for inclusion in another class.</p>	<p>Classification – no action required</p>
	<p>6.3.2.3.3 Substances in a form that any present pathogens have been neutralized or inactivated such that they no longer pose a health risk are not subject to these Instructions unless they meet the criteria for inclusion in another class.</p>	<p>Classification – no action required</p>
	<p>6.3.2.3.4 Environmental samples (including food and water samples) which are not considered to pose a significant risk of infection are not subject to these Instructions unless they meet the criteria for inclusion in another class.</p>	<p>Classification – no action required</p>
	<p>6.3.2.3.5 Dried blood spots, collected by applying a drop of blood onto absorbent material, or faecal occult blood screening tests and blood or blood components that have been collected for the purposes of transfusion or for the preparation of blood products to be used for transfusion or transplantation and any tissues or organs intended for use in transplantation are not subject to these Instructions</p>	<p>Classification – no action required</p>

Reference in TI	Text	Comments
Classification of infectious substances, cont;	6.3.2.3.6 Patient specimens for which there is minimal likelihood that pathogens are present are not subject to these Instructions if the specimen is transported in a packaging which will prevent any leakage and which is marked with the words “Exempt human specimen” or “Exempt animal specimen”, as appropriate. The packaging must meet the following conditions: a) The packaging must consist of three components: I) a leakproof primary receptacle(s);	Add “when carried as cargo”
Biological products	6.3.5.3 Decontaminated medical or clinical wastes that previously contained infectious substances are not subject to these Instructions unless they meet the criteria for inclusion in another class.	Classification – no action required
Chapter 9 Miscellaneous Dangerous Substance and Articles, including Environmentally Hazardous Substances 9.2 ASSIGNMENT TO CLASS 9	≠ c) GMMOs or GMOs which do not meet the definition of toxic substances (see 6.2) or infectious substances (see 6.3) must be assigned to UN 3245. GMMOs or GMOs are not subject to these Instructions when authorized for use by the appropriate national authorities of the States of Origin, transit and destination. Genetically modified live animals must be transported under terms and conditions of the appropriate national authorities of the States of Origin and destination.	No action required? Appropriate national authorities can determine whether carriage in baggage is appropriate.
Part 3 Table 3-2. Special provisions Alcoholic beverages containing more than 24% but not more than 70% alcohol by volume 3065 3	A9 Alcoholic beverages containing not more than 70 per cent alcohol by volume, when packed in receptacles of 5 litres or less, are not subject to these Instructions when carried as cargo.	Already clarified that applies only “when carried as cargo”
Polychlorinated biphenyls, liquid 2315 9 Polychlorinated biphenyls, solid 3432 9 Polyhalogenated biphenyls, liquid 3151 9 Polyhalogenated biphenyls, solid 3152 9 Polyhalogenated terphenyls, liquid 3151 9 Polyhalogenated terphenyls, solid 3152 9	A11 (305) These substances are not subject to these Instructions when in concentrations of not more than 50 mg/kg.	Classification – no action required
Antimony compound, inorganic, liquid, n.o.s. 3141 6.1 Antimony compound, inorganic, solid, n.o.s.* 1549 6.1	A12 (45) Antimony sulphides and oxides which contain not more than 0.5 per cent of arsenic calculated on the total mass are not subject to these Instructions .	Classification – no action required

Reference in TI	Text	Comments
Cyanides, inorganic, solid, n.o.s.* 1588 6.1	A13 (47) Ferricyanides and ferrocyanides are not subject to these Instructions	Classification – no action required
Table 3-2. Special provisions – cont; Mercury compound, liquid, n.o.s.* 2024 6.1 Mercury compound, solid, n.o.s.* 2025 6.1	A18 (66) Mercurous chloride and cinnabar are not subject to these Instructions.	Classification – no action required
Seat-belt pretensioners † 0503 1.4G Seat-belt pretensioners † 3268 9 Air bag inflators † 0503 1.4G Air bag inflators † 3268 9 Air bag modules † 0503 1.4G Air bag modules † 3268 9	A32 Air bag inflators, air bag modules or seat-belt pretensioners installed in conveyances or in completed conveyance components such as steering columns, door panels, seats, etc., which are not capable of inadvertent activation are not subject to these Instructions. The words “not restricted” and the special provision number A32 must be provided on the air waybill when an air waybill is issued.	<u>Add “when carried as cargo”</u>
Permeation devices for calibrating air quality monitoring equipment, see Special Provision	A41 Permeation devices that contain dangerous goods and that are used for calibrating air quality monitoring devices are not subject to these Instructions provided the following requirements are met: a) Each device must be constructed of a material compatible with the dangerous goods it contains; b) The total contents 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	<u>Discussion required</u>

Reference in TI	Text	Comments
Table 3-2. Special provisions – cont; Ferrocerium 1323 4.1	A42 (249) Ferrocerium (lighter flints), stabilized against corrosion, with a minimum iron content of 10 per cent are not subject to these Instructions.	Classification – no action required
Genetically modified micro-Organisms 3245 9 Genetically modified organisms 3245 9	≠ A47 (219) Genetically modified micro-organisms (GMMOs) and genetically modified organisms (GMOs) packed and marked in accordance with Packing Instruction 959 are not subject to any other requirements in these Instructions.	<u>Add “when carried as cargo”</u>
Solids containing toxic liquid, n.o.s.* 3243 6.1	A50 Mixtures of solids which are not subject to these Instructions and toxic liquids may be transported under this entry without first applying the classification criteria of Division 6.1, providing there is no free liquid visible at the time the substance is packaged and the packaging must pass a leakproofness test at the Packing Group II level. This entry must not be used for solids containing a Packing Group I liquid.	Classification – no action required
Azodicarbonamide 3242 4.1	A60 (215) This entry only applies to the technically pure substance or to formulations derived from it having an SADT higher than 75°C and therefore does not apply to formulations which are self-reactive substances. (For self reactive substances, see 2;4.2.3. Table 2-6). Homogeneous mixtures containing not more than 35 per cent by mass of azocarbonamide and at least 65 per cent of inert substance are not subject to these Instructions unless criteria of other classes or divisions are met	Classification – no action required

Reference in TI	Text	Comments
<p>Table 3-2. Special provisions – cont;</p> <p>Batteries, wet, non-spillable, electric storage 2800 8</p> <p>Battery-powered equipment 3171 9</p> <p>Battery-powered vehicle 3171 9</p> <p>Engine, fuel cell, flammable gas powered 3166 9</p> <p>Engine, fuel cell, flammable liquid powered 3166 9</p> <p>Engine, internal combustion, flammable gas powered 3166 9</p> <p>Engine, internal combustion, flammable liquid powered 3166 9</p> <p>Vehicle, flammable gas powered 3166 9</p> <p>Vehicle, flammable liquid powered 3166 9</p> <p>Vehicle, fuel cell, flammable gas powered 3166 9</p> <p>Vehicle, fuel cell, flammable liquid powered 3166 9</p>	<p>A67 Non-spillable batteries meeting the requirements of Packing Instruction 872 are not subject to these Instructions 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> <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. The words “not restricted” and the special provision number A67 must be provided on the air waybill when an air waybill is issued.</p>	<p><u>Add “when carried as cargo”</u></p>

Reference in TI	Text	Comments
<p>Argon, compressed 1006 2.2</p> <p>Gallium † 2803 8</p> <p>Helium, compressed 1046 2.2</p> <p>Krypton, compressed 1056 2.2</p> <p>Mercury contained in manufactured Articles 2809 8</p> <p>Neon, compressed 1065 2.2</p> <p>Nitrogen, compressed 1066 2.2</p> <p>Xenon 2036 2.2</p>	<p>A69 Articles, each containing not more than 100 mg of mercury, gallium or inert gas and packaged so that the quantity of mercury, gallium or inert gas per package does not exceed 1 g, are not subject to these Instructions when carried as cargo. The words “not restricted” and the special provision number A69 must be provided on the air waybill when an air waybill is issued.</p>	<p>No action required – reference already made to “when carried as cargo”</p>
<p>Table 3-2. Special provisions – cont;</p> <p>Engine, fuel cell, flammable gas powered 3166 9</p> <p>Engine, fuel cell, flammable liquid powered 3166 9</p> <p>Engine, internal combustion, flammable gas powered 3166 9</p> <p>Engine, internal combustion, flammable liquid powered 3166 9</p> <p>Vehicle, flammable gas powered 3166 9</p> <p>Vehicle, flammable liquid powered 3166 9</p> <p>Vehicle, fuel cell, flammable gas powered 3166 9</p> <p>Vehicle, fuel cell, flammable liquid powered 3166 9</p>	<p>≠ 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 Instructions.</p> <p>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 Instructions provided that:</p> <ul style="list-style-type: none"> 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. <p>Multiple engines 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 shipment.</p>	<p><u>Add “when carried as cargo”</u></p>

Reference in TI	Text	Comments
Nitrocellulose membrane filters with not more than 12.6% nitrogen, by dry mass 3270 4.1	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 <i>Manual of Tests and Criteria</i> , 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 <i>Manual of Tests and Criteria</i> , Part III, subsection 33.2.1, that nitrocellulose membrane filters in the form in which they are to be transported are not subject to the provisions of these Instructions applicable to flammable solids in Division 4.1.	Classification – no action required
Table 3-2. Special provisions – cont; Phthalic anhydride with more than 0.05% of maleic anhydride 2214 8 Tetrahydrophthalic anhydrides with more than 0.05% of maleic anhydride 2698 8	A74 (169) Phthalic anhydride in the solid state and tetrahydrophthalic anhydrides, with not more than 0.05 per cent maleic anhydride, are not subject to these Instructions . Phthalic anhydride molten at a temperature above its flash point, with not more than 0.05 per cent maleic anhydride, must be classified under UN 3256	Classification – no action required
Solids containing corrosive liquid, n.o.s.* 3244 8	A77 Mixtures of solids which are not subject to these Instructions and corrosive liquids may be transported under this entry without first applying the classification criteria of Class 8, providing there is no free liquid visible at the time the substance is packaged and the packaging must pass a leakproofness test at the Packing Group II level	Classification – no action required
Nitrocellulose, with not more than 12.6% nitrogen, by dry mass, mixture without plasticizer, without pigment 2557 4.1 Nitrocellulose, with not more than 12.6% nitrogen, by dry mass, mixture without plasticizer, without pigment 2557 4.1 Nitrocellulose, with not more than 12.6% nitrogen, by dry mass, mixture with plasticizer, without pigment 2557 4.1 Nitrocellulose, with not more than 12.6% nitrogen, by dry mass, mixture with plasticizer, with pigment 2557 4.1	A86 (241) The formulation must be prepared so that it remains homogeneous and does not separate during transport. Formulations with low nitrocellulose contents are not subject to these Instructions provided that 1) they do not exhibit dangerous properties when tested for their liability to detonate, deflagrate or explode when heated under defined confinement by tests of test series 1(a), 2(b) and 2(c) respectively in the UN <i>Manual of Tests and Criteria</i> and 2) they are not flammable solids when tested in accordance with test N1 in the UN <i>Manual of Tests and Criteria</i> , Part III, subsection 3.3.2.1.4 (chips, if necessary, crushed and sieved to a particle size of less than 1.25 mm).	<u>Add “when carried as cargo”</u>

Reference in TI	Text	Comments
<p>Vehicle, flammable gas powered 3166 Vehicle, flammable liquid powered 3166 9</p> <p>Vehicle, fuel cell, flammable gas powered 3166 9 Vehicle, fuel cell, flammable liquid powered 3166 9</p> <p>Battery-powered equipment 3171 9 Battery-powered vehicle 3171 9</p>	<p>A87 Articles which are not fully enclosed by packaging, crates or other means that prevent ready identification are not subject to the marking requirements of 5;2 or the labelling requirements of 5;3.</p>	<p>No action required</p>
<p>Table 3-2. Special provisions – cont; Ammonium nitrate fertilizers 2071 9</p>	<p>A90 (193) This entry may only be used for uniform ammonium nitrate based fertilizer mixtures of the nitrogen, phosphate or potash type, containing not more than 70 per cent ammonium nitrate and not more than 0.4 per cent total combustible/organic material calculated as carbon or with not more than 45 per cent ammonium nitrate and unrestricted combustible material. Fertilizers within these composition limits are not subject to these Instructions if shown by a Trough Test (see UN <i>Manual of Tests and Criteria</i>, Part III, subsection 38.2) not to be liable to self-sustaining decomposition.</p>	<p>Classification – no action required</p>
<p>Lead compound, soluble, n.o.s.* 2291 6.1</p>	<p>A92 (199) Lead compounds which, when mixed in a ratio of 1:1000 with 0.07 M hydrochloric acid and stirred for 1 hour at a temperature of 23°C ±2°C, exhibit a solubility of 5 per cent or less (see ISO 3711:1990 “<i>Lead chromate pigments and lead chromate-molybdate pigments — Specifications and methods of test</i>”) are considered insoluble and are not subject to these Instructions unless they meet the criteria for inclusion in another hazard class or division.</p>	<p>Classification – no action required</p>
<p>Gas cartridges (non-flammable) without a release device, nonrefillable 2037 2.2</p> <p>Receptacles, small, containing gas (non-flammable) without a release device, non-refillable 2037 2.2</p> <p>Aerosols, non-flammable 1950 2.2</p>	<p>A98 Aerosols, gas cartridges and receptacles, small, containing gas with a capacity not exceeding 50 ml, containing no constituents subject to these Instructions other than a Division 2.2 gas, are not subject to these Instructions unless their release could cause extreme annoyance or discomfort to crew members so as to prevent the correct performance of assigned duties. The words “not restricted” and the special provision number A98 must be provided on the air waybill when an air waybill is issued.</p>	<p><u>Discussion required</u></p>
<p>Isosorbide-5-mononitrate 3251 4.1</p>	<p>A110 (226) Formulations of these substances containing not less than 30 per cent non-volatile, non-flammable phlegmatizer are not subject to these Instructions</p>	<p>Classification – no action required</p>

Reference in TI	Text	Comments
<p>Table 3-2. Special provisions – cont;</p> <p>Articles, pressurized, hydraulic containing non-flammable gas 3 164 2.2</p> <p>Articles, pressurized, pneumatic containing non-flammable gas 3164 2.2</p>	<p>A114 (283) Articles, containing gas, intended to function as shock absorbers, including impact energy absorbing devices, or pneumatic springs are not subject to these Instructions provided:</p> <p>a) each article has a gas space capacity not exceeding 1.6 litres and a charge pressure not exceeding 280 bar where the product of the capacity (litres) and charge pressure (bars) does not exceed 80 (i.e. 0.5 litre gas space and 160 bar charge pressure, 1 litre gas space and 80 bar charge pressure, 1.6 litre gas space and 50 bar charge pressure, 0.28 litre gas space and 280 bar charge pressure);</p> <p>b) each article has a minimum burst pressure of 4 times the charge pressure at 20°C for products not exceeding 0.5 litre gas space capacity and 5 times charge pressure for products greater than 0.5 litre gas space capacity;</p> <p>c) each article is manufactured from material which will not fragment upon rupture;</p> <p>d) each article is manufactured in accordance with a quality assurance standard acceptable to the appropriate national authority; and</p> <p>e) the design type has been subjected to a fire test demonstrating that pressure in the article is relieved by means of a fire-degradable seal or other pressure-relief device such that the article will not fragment and the article does not rocket.</p>	<p><u>Discussion required</u></p>
<p>Nitrocellulose membrane filters with not more than 12.6% nitrogen, by dry mass 3270 4.1</p>	<p>A122 (286) Nitrocellulose membrane filters covered by this entry, each with a mass not exceeding 0.5 g, are not subject to these Instructions when contained individually in an article or a sealed packet.</p>	<p><u>Discussion required</u></p>
<p>Ammonium nitrate, liquid (hot concentrated solution) 2426 5.1</p>	<p>A129 (252) Provided the ammonium nitrate remains in solution under all conditions of transport, aqueous solutions of ammonium nitrate, with not more than 0.2 per cent combustible material, in a concentration not exceeding 80 per cent are not subject to these Instructions.</p>	<p><u>Add “when carried as cargo”</u></p>

Reference in TI	Text	Comments
<p>Table 3-2. Special provisions – cont;</p> <p>Nitrogen, refrigerated liquid 1977 2.2</p>	<p>≠ A152 Insulated packagings conforming to the requirements of Packing Instruction 202 containing refrigerated liquid nitrogen fully absorbed in a porous material are not subject to these 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. When used to contain substances not subject to these Instructions, the words “not restricted” and the special provision number A152 must be provided on the air waybill when an air waybill is issued.</p>	<p><u>Add “when carried as cargo”</u></p>
<p>Environmentally hazardous substance, liquid, n.o.s.* 3082 9</p> <p>Environmentally hazardous substance, solid, n.o.s.* 3077 9</p>	<p>A158 (335) Mixtures of solids which are not subject to these Instructions and liquids or solids classified by the shipper as environmentally hazardous substances (UN 3077 and 3082) (see Special Provision A97) may be transported under this entry, provided there is no free liquid visible at the time the substance is loaded or at the time the packaging is closed. Sealed packets and articles containing less than 10 mL of an environmentally hazardous liquid, absorbed into a solid material but with no free liquid in the packet or article, or containing less than 10 g of an environmentally hazardous solid, are not subject to these Instructions</p>	<p><u>Discussion required (on second reference)</u></p>
<p>Security type equipment _ FORBIDDEN</p>	<p>A178 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 these 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; 	<p>No action required, aligns with passenger/crew provisions of Part 8</p>

Reference in TI	Text	Comments
<p>Table 3-2. Special provisions – cont;</p> <p>Alcohols, n.o.s.* 1987 3</p> <p>Ethanol 1170 3</p> <p>Ethanol solution 1170 3</p> <p>Ethyl alcohol 1170 3</p> <p>Ethyl alcohol solution 1170 3</p> <p>Formaldehyde solution, flammable 1198 3 8</p> <p>Isopropanol 1219 3</p> <p>Isopropyl alcohol 1219 3</p>	<p>A180 Non-infectious specimens, such as specimens of mammals, birds, amphibians, reptiles, fish, insects and other invertebrates containing small quantities of UN 1170, UN 1198, UN 1987 or UN 1219 are not subject to these Instructions provided the following packing and marking requirements are met: a) specimens are:</p> <ol style="list-style-type: none"> 1) wrapped in paper towel and/or cheesecloth moistened with alcohol or an alcohol 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 or an alcohol 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 a another plastic bag with absorbent material then heatsealed;</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 issued.</p>	<p><u>Discussion required</u></p>

Reference in TI	Text	Comments
<p>5.1 EXCEPTED QUANTITIES</p>	<p>5.1.1 Excepted quantities of dangerous goods of certain classes, other than articles, meeting the provisions of this chapter are not subject to any other provisions of these Instructions except for:</p> <p>a) the prohibition in post in 1;2.3; b) the definitions in 1;3; c) the training requirements in 1;4; d) the classification procedures and packing group criteria in Part 2; e) the packaging requirements of 4;1.1.1, 4;1.1.3.1, 4;1.1.5, 4;1.1.6, 4;1.1.7 and 4;1.1.8 (4;1.1.6 does not apply to UN 3082); f) the loading restriction in 7;2.1; and g) the reporting requirements of dangerous goods accidents, incidents and other occurrences in 7;4.4 and 7;4.5.</p> <p><i>Note.— In the case of radioactive material, the requirements for radioactive material in excepted packages in 1;6.1.5 apply.</i></p>	<p><u>Perhaps add a new h) “the prohibition of dangerous goods in baggage in 8;1,1</u></p>
<p>Packing Instruction 202 This instruction applies to Class 2 refrigerated liquefied gases in open and closed cryogenic receptacles.</p>	<p><i>Note.— Insulated packagings containing refrigerated liquid nitrogen fully absorbed in a porous material are not subject to these Instructions provided they meet the requirements of Special Provision A152.</i></p>	<p><u>Add “when carried as cargo”</u></p>
<p>Packing Instruction 492 Passenger and cargo aircraft for UN 3292 only</p>	<p>Batteries may be offered for transport and transported unpacked or in protective enclosures such as fully enclosed or wooden slatted crates that are not subject to the requirements of Part 6 of these Instructions.</p>	<p><u>Discussion required</u></p>
<p>Packing Instruction 620 This packing instruction applies to UN 2814 and UN 2900.</p>	<p>f) Other dangerous goods must not be packed in the same packaging as Division 6.2 infectious substances unless they are necessary for maintaining the viability, stabilizing or preventing degradation or neutralizing the hazards of the infectious substances. A quantity of 30 ml or less of dangerous goods included in Class 3, 8 or 9 may be packed in each primary receptacle containing infectious substances provided these substances meet the requirements of 3;5. These small quantities of dangerous goods of Class 3, 8 or 9 are not subject to any additional requirements of these Instructions when packed in accordance with this packing instruction.</p>	<p>No action required because 6.2 substances not permitted in baggage.</p>

Reference in TI	Text	Comments
<p>Packing Instruction 650 This packing instruction applies to UN 3373.</p>	<p>11) Infectious substances assigned to UN 3373 which are packed and marked in accordance with this packing instruction are not subject to any other requirement in these Instructions except for the following:</p> <ul style="list-style-type: none"> a) the name and address of the shipper and of the consignee must be provided on each package; b) the name and telephone number of a person responsible must be provided on a written document (such as an air waybill) or on the package; c) classification must be in accordance with 2;6.3.2; d) the incident reporting requirements in 7;4.4 must be met; e) the inspection for damage or leakage requirements in 7;3.1.3 and 7;3.1.4; and f) passengers and crew members are prohibited from transporting infectious substances either as, or in, carry-on baggage or checked baggage or on their person. <p><i>Note.— When the shipper or consignee is also the “person responsible” as referred to in b), the name and address need be marked only once in order to satisfy the name and marking provisions in both a) and b).</i></p>	<p>No action required as carriage in baggage addressed by f)</p>
<p>Packing Instruction 953 Passenger and cargo aircraft for UN 2807 only</p>	<p>Magnetized materials with field strengths causing a compass deflection of more than 2 degrees at a distance of 2.1 m but not more than 2 degrees at a distance of 4.6 m (equivalent to 0.418 A/m or 0.00525 Gauss measured at a distance of 4.6 m) are not subject to any other requirements in these Instructions except for the following:</p> <ul style="list-style-type: none"> a) the shipper must make prior arrangements with the operator identifying the magnetized material. The dangerous goods transport document requirements of Part 5;4 are not applicable provided alternative written or electronic documentation includes the words “magnetized material” in association with the description of the goods; b) the package must bear the magnetized material handling label; c) the operator must stow the packaged magnetized material in accordance with 7;2.10; and d) the incident reporting requirements of 7;4.4 must be met. 	<p><u>Add “when carried as cargo”</u></p>

Reference in TI	Text	Comments
<p>Packing Instruction 959 Passenger and cargo aircraft for UN 3245 only</p>	<p>GMOs or GMMOs assigned to UN 3245 which are packed and marked in accordance with this packing instruction are not subject to any other requirement in these Instructions except for the following:</p> <ol style="list-style-type: none"> 1) the name and address of the shipper and of the consignee must be provided on each package; 2) classification must be in accordance with 2;9.2.1 c); 3) the incident reporting requirements in 7;4.4 must be met; 4) the inspection for damage or leakage requirements in 7;3.1.3 and 7;3.1.4; 5) passengers and crew members are prohibited from transporting UN 3245 either as, or in, carry-on baggage or checked baggage or on their person. <p>ADDITIONAL PACKING REQUIREMENTS</p> <p>— When dry ice or liquid nitrogen is used, all applicable requirements of these Instructions must be met. When used, ice or dry ice must be placed outside the secondary packagings or in the outer packaging or an overpack.</p> <p>Interior supports must be provided to secure the secondary packagings in the original position after the ice or dry ice has dissipated. If ice is used, the outside packaging or overpack must be leakproof. If dry ice is used, the requirements in Packing Instruction 954 must be met.</p> <p>— The primary receptacle and the secondary packaging must maintain their integrity at the temperature of the refrigerant used as well as the temperatures and the pressures which could result if refrigeration were lost.</p>	<p><u>Add “when carried as cargo”</u></p>

Reference in TI	Text	Comments
<p>Packing Instruction 965 Passenger and cargo aircraft for UN 3480 This entry applies to lithium ion or lithium polymer batteries.</p>	<p>Section I of this packing instruction applies to lithium ion and lithium polymer cells and batteries that are assigned to Class 9. Certain lithium ion and lithium polymer cells and batteries offered for transport and meeting the requirements of Section II of this packing instruction, subject to the paragraphs above, are not subject to other additional requirements of these Instructions.</p> <p>SECTION I</p> <p>Section I requirements apply to each cell or battery type that has been determined to meet the criteria for assignment to Class 9.</p> <p>Each cell or battery must:</p> <p>1) be 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; and</p> <p><i>Note.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.</i></p> <p>2) incorporate a safety venting device or be designed to preclude a violent rupture under conditions normally incident to transport and be equipped with an effective means of preventing external short circuits.</p> <p>Each battery containing cells or a series of cells connected in parallel must be equipped with an effective means, as necessary, to prevent dangerous reverse current flow (e.g. diodes, fuses).</p>	<p><u>Add “when carried as cargo”</u></p>

Reference in TI	Text	Comments
<p>Packing Instruction 965 cont; Passenger and cargo aircraft for UN 3480 This entry applies to lithium ion or lithium polymer batteries.</p>	<p>SECTION II Lithium ion cells and batteries offered for transport are not subject to other additional requirements of these Instructions if they meet the requirements of this section. Lithium ion cells and batteries may be offered for transport if they meet the following: 1) for lithium ion cells, the Watt-hour rating (see the Glossary of Terms in Attachment 2) is not more than 20 Wh; 2) for lithium ion batteries, the Watt-hour rating is not more than 100 Wh; — the Watt-hour rating must be marked on the outside of the battery case except for those batteries manufactured before 1 January 2009; 3) each cell or battery is of the type proven to meet the requirements of each test in the UN <i>Manual of Tests and Criteria</i>, Part III, section 38.3. <i>Note.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.</i></p>	<p><u>Add “when carried as cargo”</u></p>

Reference in TI	Text	Comments
<p>Packing Instruction 966 Passenger and cargo aircraft for UN 3481 (packed with equipment) only This entry applies to lithium ion or lithium polymer batteries packed with equipment.</p>	<p>Section I of this packing instruction applies to lithium ion and lithium polymer cells and batteries that are assigned to Class 9. Certain lithium ion and lithium polymer cells and batteries offered for transport and meeting the requirements of Section II of this packing instruction, subject to the paragraph above, are not subject to other additional requirements of these Instructions.</p> <p>SECTION I</p> <p>Section I requirements apply to each cell or battery type that has been determined to meet the criteria for assignment to Class 9.</p> <p>Each cell or battery must:</p> <p>1) be 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; and</p> <p><i>Note.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.</i></p> <p>2) incorporate a safety venting device or be designed to preclude a violent rupture under conditions normally incident to transport and be equipped with an effective means of preventing external short circuits.</p> <p>Each battery containing cells or a series of cells connected in parallel must be equipped with an effective means, as necessary, to prevent dangerous reverse current flow (e.g. diodes, fuses</p>	<p><u>Add “when carried as cargo”</u></p>

Reference in TI	Text	Comments
<p>Packing Instruction 966 cont; Passenger and cargo aircraft for UN 3481 (packed with equipment) only This entry applies to lithium ion or lithium polymer batteries packed with equipment.</p>	<p>SECTION II Lithium ion cells and batteries packed with equipment offered for transport are not subject to other additional requirements of these Instructions if they meet the requirements of this section. Lithium ion cells and batteries may be offered for transport if they meet the following:</p> <ol style="list-style-type: none"> 1) for lithium ion cells, the Watt-hour rating (see the Glossary of Terms in Attachment 2) is not more than 20 Wh; 2) for lithium ion batteries, the Watt-hour rating is not more than 100 Wh; <p>— the Watt-hour rating must be marked on the outside of the battery case except for those batteries manufactured before 1 January 2009;</p> <ol style="list-style-type: none"> 3) 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. <p><i>Note.— Batteries</i></p> 	<p><u>Add “when carried as cargo”</u></p>
<p>Packing Instruction 967 Passenger and cargo aircraft for UN 3481 (contained in equipment) only This entry applies to lithium ion or lithium polymer batteries contained in equipment.</p>	<p>Section I of this packing instruction applies to lithium ion and lithium polymer cells and batteries that are assigned to Class 9. Certain lithium ion and lithium polymer cells and batteries offered for transport and meeting the requirements of Section II of this packing instruction, subject to the paragraph above, are not subject to other additional requirements of these Instructions.</p> <p>SECTION I Section I requirements apply to each cell or battery type that has been determined to meet the criteria for assignment to Class 9. Each cell or battery must:</p> <ol style="list-style-type: none"> 1) be 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; and <p><i>Note.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.</i></p> <ol style="list-style-type: none"> 2) incorporate a safety venting device or be designed to preclude a violent rupture under conditions normally incident to transport and be equipped with an effective means of preventing external short circuits. <p>Each battery containing cells or a series of cells connected in parallel must be equipped with an effective means, as necessary, to prevent dangerous reverse current flow (e.g. diodes, fuses).</p>	<p><u>Add “when carried as cargo”</u></p>

Reference in TI	Text	Comments
<p>Packing Instruction 967 cont; Passenger and cargo aircraft for UN 3481 (contained in equipment) only This entry applies to lithium ion or lithium polymer batteries contained in equipment.</p>	<p>SECTION II Lithium ion cells and batteries contained in equipment offered for transport are not subject to other additional requirements of these Instructions if they meet the requirements of this section. Lithium ion cells and batteries may be offered for transport if they meet the following: 1) for lithium ion cells ,the Watt-hour rating (see the Glossary of Terms in Attachment 2) is not more than 20 Wh; 2) for lithium ion batteries, the Watt-hour rating is not more than 100 Wh; — the Watt-hour rating must be marked on the outside of the battery case except for those batteries manufactured before 1 January 2009; 3) each cell or battery is of the type proven to meet the requirements of each test in the UN <i>Manual of Tests and Criteria</i>, Part III, section 38.3. <i>Note.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.</i> Devices such as radio frequency identification (RFID) tags, watches and temperature loggers, which are not capable of generating a dangerous evolution of heat, may be transported when intentionally active. When active, these devices must meet defined standards for electromagnetic radiation to ensure that the operation of the device does not interfere with aircraft systems. General requirements Equipment must be packed in strong outer packagings that conform to Part 4;1.1.1, 1.1.3.1 and 1.1.10 (except 1.1.10.1). ADDITIONAL PACKING REQUIREMENTS</p>	<p><u>Add “when carried as cargo”</u></p>

Reference in TI	Text	Comments
<p>Packing Instruction 968 Passenger and cargo aircraft for UN 3090 Passenger and cargo aircraft for UN 3090 This entry applies to lithium metal or lithium alloy batteries in Class 9 (Section I) and lithium metal or lithium alloy batteries subject to specific requirements of these Instructions (Section II).</p>	<p>Section I of this packing instruction applies to lithium metal and lithium alloy cells and batteries that are assigned to Class 9. Certain lithium metal and lithium alloy cells and batteries offered for transport and meeting the requirements of Section II of this packing instruction, subject to the paragraphs above, are not subject to other additional requirements of these Instructions.</p> <p>SECTION I Section I requirements apply to each cell or battery type that has been determined to meet the criteria for assignment to Class 9. Each cell or battery must:</p> <ol style="list-style-type: none"> 1) be of the type proven to meet the requirements of each test in the UN <i>Manual of Tests and Criteria</i>, Part III, section 38.3; and <i>Note.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.</i> 2) incorporate a safety venting device or be designed to preclude a violent rupture under conditions normally incident to transport and be equipped with an effective means of preventing external short circuits. Each battery containing cells or a series of cells connected in parallel must be equipped with an effective means, as necessary, to prevent dangerous reverse current flow (e.g. diodes, fuses). 	<p><u>Add “when carried as cargo”</u></p>
<p>Packing Instruction 968 cont; Passenger and cargo aircraft for UN 3090 This entry applies to lithium metal or lithium alloy batteries in Class 9 (Section I) and lithium metal or lithium alloy batteries subject to specific requirements of these Instructions (Section II).</p>	<p>SECTION II Lithium metal or lithium alloy cells and batteries offered for transport are not subject to other additional requirements of these Instructions if they meet the requirements of this section. Lithium metal or lithium alloy cells and batteries may be offered for transport if they meet the following:</p> <ol 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) each cell or battery is of the type proven to meet the requirements of each test in the UN <i>Manual of Tests and Criteria</i>, Part III, section 38.3. <i>Note.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.</i> <p>General requirements Batteries must be packed in strong outer packagings that conform to Part 4;1.1.1, 1.1.3.1 and 1.1.10 (except 1.1.10.1).</p>	<p><u>Add “when carried as cargo”</u></p>

Reference in TI	Text	Comments
<p>Packing Instruction 969 Passenger and cargo aircraft for UN 3091 (packed with equipment) only This entry applies to lithium metal or lithium alloy batteries packed with equipment</p>	<p>Section I of this packing instruction applies to lithium metal and lithium alloy cells and batteries that are assigned to Class 9. Certain lithium metal and lithium alloy cells and batteries offered for transport and meeting the requirements of Section II of this packing instruction, subject to the paragraph above, are not subject to other additional requirements of these Instructions.</p> <p>SECTION I</p> <p>Section I requirements apply to each cell or battery type that has been determined to meet the criteria for assignment to Class 9.</p> <p>Each cell or battery must:</p> <ol style="list-style-type: none"> 1) be of the type proven to meet the requirements of each test in the UN <i>Manual of Tests and Criteria</i>, Part III, section 38.3; and <i>Note.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.</i> 2) incorporate a safety venting device or be designed to preclude a violent rupture under conditions normally incident to transport and be equipped with an effective means of preventing external short circuits. <p>Each battery containing cells or a series of cells connected in parallel must be equipped with an effective means, as necessary, to prevent dangerous reverse current flow (e.g. diodes, fuses).</p>	<p><u>Add “when carried as cargo”</u></p>
<p>Packing Instruction 969 cont; Passenger and cargo aircraft for UN 3091 (packed with equipment) only This entry applies to lithium metal or lithium alloy batteries packed with equipment</p>	<p>SECTION II</p> <p>Lithium metal cells and batteries packed with equipment offered for transport are not subject to other additional requirements of these Instructions if they meet the requirements of this section.</p> <p>Lithium metal cells and batteries may be offered for transport if they meet the following:</p> <ol 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) each cell or battery is of the type proven to meet the requirements of each test in the UN <i>Manual of Tests and Criteria</i>, Part III, section 38.3. <i>Note.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.</i> <p>General requirements</p> <p>Batteries must be packed in strong outer packagings that conform to Part 4;1.1.1, 1.1.3.1 and 1.1.10 (except 1.1.10.1).</p>	<p><u>Add “when carried as cargo”</u></p>

Reference in TI	Text	Comments
<p>Packing Instruction 970 Passenger and cargo aircraft for UN 3091 (contained in equipment) only This entry applies to lithium metal or lithium alloy batteries contained in equipment.</p>	<p>Section I of this packing instruction applies to lithium metal and lithium alloy cells and batteries that are assigned to Class 9. Certain lithium metal and lithium alloy cells and batteries offered for transport and meeting the requirements of Section II of this packing instruction, subject to the paragraph above, are not subject to other additional requirements of these Instructions.</p> <p>SECTION I</p> <p>Section I requirements apply to each cell or battery type that has been determined to meet the criteria for assignment to Class 9.</p> <p>Each cell or battery must:</p> <p>1) be of the type proven to meet the requirements of each test in the UN <i>Manual of Tests and Criteria</i>, Part III, section 38.3; and</p> <p><i>Note.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.</i></p> <p>2) incorporate a safety venting device or be designed to preclude a violent rupture under conditions normally incident to transport and be equipped with an effective means of preventing external short circuits.</p> <p>Each battery containing cells or a series of cells connected in parallel must be equipped with an effective means, as necessary, to prevent dangerous reverse current flow (e.g. diodes, fuses).</p>	<p><u>Add “when carried as cargo”</u></p>

Reference in TI	Text	Comments
<p>Packing Instruction 970 Passenger and cargo aircraft for UN 3091 (contained in equipment) only This entry applies to lithium metal or lithium alloy batteries contained in equipment.</p>	<p>SECTION II Lithium metal cells and batteries contained in equipment offered for transport are not subject to other additional requirements of these Instructions if they meet the requirements of this section. Lithium metal cells and batteries may be offered for transport if they meet the following: 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) each cell or battery is of the type proven to meet the requirements of each test in the UN <i>Manual of Tests and Criteria</i>, Part III, section 38.3. <i>Note.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.</i> Devices such as radio frequency identification (RFID) tags, watches and temperature loggers, which are not capable of generating a dangerous evolution of heat, may be transported when intentionally active. When active, these devices must meet defined standards for electromagnetic radiation to ensure that the operation of the device does not interfere with aircraft systems.</p>	<p><u>Add “when carried as cargo”</u></p>
<p>5;3.5.2 Handling Labels</p>	<p>≠ Packages containing lithium batteries packed according to Packing Instructions 965 to 970 that are not subject to other additional requirements of these Instructions must bear a “Lithium battery” handling label shown in Figure 5-31, as required by the applicable packing instruction. The label must be a minimum dimension of 120 mm × 110 mm except labels of 74 mm × 105 mm may be used on packages containing lithium batteries where the packages are of dimensions such that they can only bear smaller labels. The label must show “Lithium metal batteries” or “Lithium ion batteries”, as applicable. Where the package contains both types of batteries, the label must show “Lithium metal and lithium ion batteries”.</p>	<p><u>Add “when carried as cargo”</u></p>

Reference in TI	Text	Comments
7;4.4 Reporting of Dangerous Goods Accidents and Incidents	<p>An operator must report dangerous goods accidents and incidents to the appropriate authorities of the State of the Operator and the State in which the accident or incident occurred in accordance with the reporting requirements of those appropriate authorities.</p> <p><i>Note.— This includes incidents involving dangerous goods that are not subject to all or part of the Technical Instructions through the application of an exception or of a special provision (e.g. an incident involving the short circuiting of a dry cell battery that is required to meet short circuit prevention conditions in a special provision of 3;3).</i></p>	No action required.
7; 6.1	<p><i>dry shipper (vapour shipper)</i> — may contain free liquid nitrogen. Dry shippers are not subject to these Instructions only when they do not permit the release of any free liquid nitrogen irrespective of the orientation of the packaging</p>	<u>Discussion required</u>

— END —