

**TECHNICAL INSTRUCTIONS FOR THE SAFE TRANSPORT OF
DANGEROUS GOODS BY AIR (DOC 9284)**

REVISIONS INCORPORATED IN THE 2025-2026 EDITION

The Technical Instructions have been amended to maintain alignment, as far as possible, with the Twenty-third Revised Edition of the United Nations *Recommendations on the Transport of Dangerous Goods*, to address air-specific safety risks and to facilitate air transport while maintaining safety.

The amendments include the following:

— revisions to general provisions including:

- addition of new exception for data loggers and cargo-tracking devices with installed lithium batteries attached to or placed in packages, overpacks or unit load devices (1;1.1.5.1 i));
- addition of new definition for “degree of filling” (1;3);
- addition of a note under the definition for “exclusive use” to provide clarity (1;3); and
- clarification of definition for “recycled plastics material” (1;3);

— revisions to classification criteria including:

- addition of requirement for the shipper to make information used to classify dangerous goods available to the appropriate national authority upon request (2; Introductory chapter, 1.2);
- clarification of classification criteria for articles containing dangerous goods, not otherwise specified, when containing lithium cells or batteries (2; Introductory chapter, 6.0);
- revision to definitions applicable to Class 1 – Explosives (2;1.2);
- addition of new entries in list of currently assigned organic peroxides in packagings (Table 2-7);
- updating of indicative examples of infectious substances included in Category A with respect to monkeypox virus (Table 2-10); and
- revision to list of substances and articles of Class 9 (Table 2-16) including:
 - addition of new entries for sodium ion batteries and vehicles powered by lithium and sodium ion batteries; and
 - addition of criteria for excepting pharmaceutical products that contain genetically modified micro-organisms (GMMOs) or genetically modified organisms (GMOs) from the Technical Instructions;

— addition of classification criteria for sodium ion batteries (2;9.4)

— addition of new entries in Table 3-1 including:

- **Disilane** (UN 3553);
- **Fire suppressant dispersing devices** (UN 0514);
- **Fire suppressant dispersing devices** (UN 3559);
- **Gallium contained in manufactured articles** (UN 3554);
- **Sodium ion batteries** with organic electrolyte (UN 3551);
- **Sodium ion batteries contained in equipment** with organic electrolyte (UN 3552);
- **Sodium ion batteries packed with equipment** with organic electrolyte (UN 3552);
- **Tetramethylammonium hydroxide aqueous solution** with not less than 25%

- tetramethylammonium hydroxide (UN 3560);
 - **Tetramethylammonium hydroxide aqueous solution** with not more than 2.5% tetramethylammonium hydroxide (UN 1835);
 - **Trifluoromethyltetrazole sodium salt in acetone** with not less than 68% acetone, by mass (UN 3555);
 - **Vehicle, lithium ion battery powered** (UN 3556);
 - **Vehicle, lithium metal battery powered** (UN 3557); and
 - **Vehicle, sodium ion battery powered** (UN 3558);
- renaming of entries in Table 3-1 including:
- **Batteries, containing sodium** to **Batteries, containing metallic sodium or sodium alloy** for UN 3292;
 - **Cells, containing sodium** to **Cells, containing metallic sodium or sodium alloy** for UN 3292; and
 - **Tetramethylammonium hydroxide solution** to **Tetramethylammonium hydroxide aqueous solution** with more than 2.5% but less than 25% tetramethylammonium hydroxide for UN 1835;
- assignment of Special Provision A88 to:
- **Articles containing corrosive substance, n.o.s.*** (UN 3547);
 - **Articles containing flammable gas, n.o.s.*** (UN 3537);
 - **Articles containing flammable liquid, n.o.s.*** (UN 3540);
 - **Articles containing flammable solid, n.o.s.*** (UN 3541);
 - **Articles containing miscellaneous dangerous goods, n.o.s.*** (UN 3548);
 - **Articles containing non-flammable, non toxic gas, n.o.s.*** (UN 3538); and
 - **Articles containing toxic substance, n.o.s.*** (UN 3546);
- revision to special provisions including:
- Special Provision A40: clarification of criteria for classification as a desensitized explosive;
 - Special Provision A69: updated to incorporate gallium;
 - Special Provisions A88, A99, A146 and A154: updated to incorporate sodium ion cells or batteries;
 - Special Provision A107: revised to allow machinery, apparatus or devices to contain larger quantities of environmentally hazardous substances and excepting those containing smaller quantities from the Instructions;
 - Special Provision A115: updated to incorporate fire suppressant dispersing devices;
 - Special Provisions A123 and A199: addition of provisions allowing dry or nickel-metal hydride battery-powered devices to be transported when active;
 - Special Provision A129: addition of criteria for allowing transport of ammonium nitrate hot concentrated solutions;
 - Special Provision A164: removed on account of being redundant;
 - Special Provisions A185 and A214: revised to incorporate new entries in Table 3-1 for **Vehicle, lithium ion battery powered** (UN 3556); **Vehicle, lithium metal battery powered** (UN 3557) and **Vehicle, sodium ion battery powered** (UN 3558); and
 - Special Provision A190: clarification of provision for transporting neutron radiation detectors containing non-pressurized boron trifluoride gas;
- addition of the following new special provisions:
- Special Provision A226: addition of a transition period during which UN numbers

- assigned to **Detonators, electric** (UN Nos. 0030, 0255 and 0456) can be used in lieu of UN numbers assigned to **Detonators, electronic** (UN 0511, UN 0512 and UN 0513);
- Special Provision A228: classification criteria for sodium ion cells and batteries with organic electrolyte versus sodium ion batteries with aqueous alkali electrolyte;
 - Special Provision A229: classification criteria for UN 1010 – **Butadienes and hydrocarbon mixture, stabilized**;
 - Special Provision A230: criteria for excepting UN 3270 – **Nitrocellulose membrane filters** from the Technical Instructions;
 - Special Provision A231: criteria for excepting vehicles powered by sodium ion batteries from the Technical Instructions;
 - Special Provision A232: classification criteria for fire suppressant dispersing devices;
 - Special Provision A233: classification criteria for tetramethylammonium hydroxide aqueous solution; and
 - Special Provision A234: transition period before new provisions in Table 3-1 for tetramethylammonium hydroxide aqueous solution must be used;
- revision to general packing requirements and packing instructions:
- new provision extending the allowance of a lower internal pressure differential for liquids in Packing Group III of Class 3 or Division 6.1 to those of Class 9 (4;1.1.6);
 - revision to requirements for protection of valves on cylinders and closed cryogenic receptacles containing gases of Class 2 (4;4.1.1.8);
 - revision to Packing Instruction 650 including:
 - clarification of test criteria;
 - allowance for certain information required for infectious substances assigned to UN 3373 to be provided through a machine-readable form;
 - revision to Packing Instruction 952 including:
 - incorporation of new UN numbers for vehicles powered by lithium and sodium ion batteries;
 - addition of provisions for vehicles powered by lithium ion, rechargeable lithium metal batteries and sodium ion batteries to be shipped with the batteries at a state of charge not exceeding 30 per cent of their rated capacity or an indicated battery capacity not exceeding 25 per cent;
 - revision to Packing Instruction 955 to incorporate sodium ion batteries;
 - revision to Packing Instruction 961 to incorporate UN 3559 – **Fire suppressant dispersing devices**;
 - revision to Packing Instruction 964 to clarify that an exception from the pressure differential requirements for packagings containing UN 3082 – **Environmentally hazardous substance, liquid, n.o.s.** applies only when packed in combination packagings;
 - revisions to packing instructions for lithium batteries including:
 - an extension of the provisions for UN 3480 – **Lithium ion batteries** to be shipped at a state of charge not exceeding 30 per cent of their rated capacity to UN 3481 – **Lithium ion batteries contained in equipment** and UN 3481 – **Lithium ion batteries packed with equipment** (Packing Instructions 966 and 967);
 - addition of a requirement for packages not subject to packaging performance tests of Part 6 to withstand a stacking test (Section II of Packing Instructions 966 and 969 and Sections I and II of Packing Instructions 967 and 970);
 - addition of packing instructions for sodium ion batteries (Packing Instructions 976, 977 and 978);
- revision to shipper responsibilities including:
- incorporation of provisions for sodium ion batteries (5;2 and 5;3);

- addition of a three-month transition period during which vehicles powered by lithium batteries can be identified on the dangerous goods transport document as UN 3171 – **Battery powered vehicle** in lieu of UN 3556 – **Vehicle, lithium ion battery powered**, UN 3557 – **Vehicle, lithium metal battery powered** or UN 3558 – **Vehicle, sodium ion battery powered** (5;4.1.4.1);
 - addition of a requirement for the dimension of packages containing radioactive materials to be on the dangerous goods transport document (5;4.1.5.7.1 f)); and
 - addition of a requirement for the shipper to make dangerous goods transport information required by the Technical Instructions to be made available to the appropriate national authority upon request (5;4.4.1);
- revisions to packaging requirements and tests including:
- addition of a requirement for marks required for packagings other than inner packagings to be on a non-removable component (Part 6;2.1.1);
 - clarification of requirement for rolling hoops on drums (6;3.1);
 - extension to the allowance of a lower internal pressure differential for liquids in Packing Group III of Class 3 or Division 6.1 to those of Class 9 (6;4.5.3 a)); and
 - updating of references to ISO standards (6;5);
- revisions to operator responsibilities to clarify intent and improve readability (7;2 and 7;4);
- revisions to provision for passengers and crew to carry portable electronic devices containing batteries including:
- addition of a requirement for devices containing lithium batteries carried in the cabin to be protected from damage and inadvertent activation (Table 8-1, 1) e)); and
 - revisions to clarify that the lithium content and Watt-hour rating limits under which passengers and crew can carry active devices apply to the whole device and not to the individual cells or batteries for active devices (Table 8-1, 1) e)).
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