SOUTH AFRICAN CIVIL AVIATION AUTHORITY

TECHNICAL GUIDANCE MATERIAL
for
Vaccine Handling

SUBJECT: TECHNICAL GUIDANCE MATERIAL FOR COVID-19 VACCINE HANDLING

EFFECTIVE DATE: 22 January 2021

APPLICABILITY

The provisions of this apply to all Freight Forwarders, Air Operators, Ramp Handlers and Couriers desiring to be involved in the distribution of the Covid-19 Vaccine.

PURPOSE

The purpose of this Covid-19 Vaccine Handling TGM is to assist and give guidance to the entities that will participate in the movement of the vaccine.

REQUIREMENTS

Based on addendum 1 to the 2021-2022 edition of the ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air (Technical Instructions) issued on 31 December 2020 COVID-19 vaccines that may contain GMO / GMMO were removed from the provisions of the Technical Instructions. Further to that, the engagements with the pharmaceutical industry identified that none of the vaccines developed/in development use weakened, live viruses, so there is no need to address the potential of a vaccine being classified as UN 3373. However, the vaccines have handling and transport requirement temperatures that varies from -80°C and +2°C to +8°C and therefore requiring dry ice to be used as a refrigerant. In addition to dry ice, the vaccines package may contain data loggers and cargo tracking devices that are powered mostly by lithium batteries.

For all shipments where, dry ice is used as a refrigerant for general cargo or pharmaceutical products, the shipper/operator/handler must be dangerous goods qualified, and the packing requirements must meet the applicable requirements of the Technical Instructions or the current latest IATA Dangerous Goods Regulations and Part 92 of the South African Civil Aviation Regulations, 2011 as amended.

1. REFERENCE:

i. ICAO Annex 18
ii. South African Civil Aviation Regulations, 2011
iii. ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air

2. TERMS AND ABBREVIATIONS:

2.1 Terms

TERM	DEFINITION
Unit Load Device	A unit load device (ULD) is a pallet or container used to load luggage, freight, and mail on wide-body aircraft and specific narrow-body aircraft. It allows a large quantity of cargo to be bundled into a single unit.

2.2 Abbreviations

ABBREVIATION	DESCRIPTION
DGR	Dangerous Goods Regulations
E: AVSEC	Executive: Aviation Security
GMO	Genetically modified organisms/
GMMO	Genetically modified micro-organisms
IATA	International Air Transport Association
ICAO	International Civil Aviation Organisation
ICAO TI	ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air
M: DG	Manager: Dangerous Goods
SACAA	South African Civil Aviation Authority
SAPS	South African Police Service
SM: DC	Senior Manager: Dangerous Goods & Cargo Security
TGM	Technical Guidance Material
ULD	Unit Load Device

3. GENERAL

3.1 Carriage of Covid-19 Vaccines

3.1.1 The Covid-19 vaccines that contain dry-ice as a refrigerant, data loggers and tracking devices shall comply with dangerous goods requirements as detailed in the ICAO Technical Instructions or the current IATA Dangerous Goods Regulations Manual.

3.1.2 Vaccines described under 3.1.1 shall only be transported by air operators approved to carry dangerous goods by the SACAA or by the respective foreign national authorities in case of foreign air operators.

3.1.3 All personnel involved in handling of dangerous goods (Covid-19 vaccines) shipments shall be suitably qualified commensurate with their duties, e.g. acceptance person must be qualified in Dangerous Goods Category 6.

3.1.4 Air Operators must, based on risk-assessments, determine aircraft capacity for the quantity limits of dry ice that can be carried safely.

3.2 Dangerous Goods Specific Considerations - Dry Ice

3.2.1 Dry ice (Carbon dioxide, solid) is regulated under Part 92 of the South African Civil Aviation Regulations, read with the ICAO Technical Instructions / IATA Dangerous Goods Regulations (DGR) even when used as a refrigerant for non-dangerous goods. Shippers must be dangerous goods qualified (i.e. trained and assessed) according to the training requirements in the Regulations and follow the packing requirements laid out in Packing Instruction 954.

3.2.2 Dry ice must only be in packaging that allows the release of the carbon dioxide gas that is generated as the dry ice sublimates.

a. Packaging such as aluminium, plastic or steel drums or jerricans are not suitable.

b. packaging such as wood, fibreboard or more likely expanded polystyrene boxes are suitable as these materials are gas permeable.

3.2.3 Dry ice can be placed directly into the appropriate packaging or in the dry ice bunker of the ULD or loose in the ULD. Completed packages can be packed with the dry ice into a larger box to form an overpack. Alternatively, the packages can be packed into a ULD with the dry ice provided that the air operator agrees. In that respect, it is not just the dry ice inside a package that can be packed into an aircraft ULD but the dry ice itself can also be in loose in the ULD. It must be emphasized that “overpack” does not exist for general cargo, and acceptance staff will consider the “overpack” of general cargo as a single package (piece).

3.2.4 Where the dry ice is in packages, the outside of each package must:

a. be marked with the name and address of the shipper (consignor) and consignee, “UN 1845”, “Carbon dioxide, solid” or “Dry ice” and the net weight of dry ice in each package; and

b. be labelled with a Class 9 hazard label.

3.2.5 If the individual packages are packed with the dry ice into an overpack then the information in 3.2. 4 a. and b. must be on the outside of the overpack. Where very large numbers of packages each containing dry ice are to be offered for transport, it is recommended that the shipper group packages into an overpack as this will facilitate handling and reduce the time and effort required by the airline or their ground service provider to perform the dangerous goods acceptance check.

3.2.6 There is no requirement for a Shipper's Declaration for Dangerous Goods where the dry ice is used as a refrigerant for non-dangerous goods. However, there must be information on the air waybill, or if there is

no air waybill on another document, that shows: “UN 1845”, “Carbon dioxide, solid” or “Dry ice”, the number of packages and the weight of dry ice in each package.

3.2.7 Shippers shall always make advance arrangement with the freight forwarder or directly with the air operator for the transport of shipments containing dry ice to ensure that the total weight of dry ice being offered in the consignment does not exceed the limit for the particular aircraft type. Shippers must ensure that all requirements in the ICAO TI or DGR have been followed before tendering the shipment because a shipment rejection can possibly result in a delay and potentially miss the booked flight.

3.3 Dangerous Goods Specific Considerations - Lithium Batteries

3.3.1 Where lithium battery-powered data loggers / cargo tracking devices are used or have been installed in the shipments, the shipper / air operator must ensure that the applicable provisions in the ICAO TI or DGR are complied with. These include:

a. Obtaining a copy of the lithium battery test summary from the manufacturer / supplier of the lithium batteries or the manufacturer / supplier of the device. This test summary must confirm that the lithium cell or battery type has passed all applicable tests in Subsection 38.3 of the UN Manual of Tests and Criteria.

b. Packing requirements laid out in Section II of Packing Instruction 967 or Packing Instruction 970 in the ICAO TI or DGR, as applicable.

c. Unless the data logger / cargo tracking device only contains a button cell, then where there are:

i. more than two packages in the consignment that contain a data logger / cargo tracking device in each package, or

ii. multiple data loggers / tracking devices in a package (e.g. more than four devices powered by lithium cells or more than two devices powered by lithium batteries)

iii. then each package must bear the lithium battery mark with “UN 3481” or “UN 3091” as applicable, and there must be a compliance statement on the air waybill, when an air waybill is used.

d. All employees preparing or offering shipments must receive adequate instruction on the provisions set out in the aforementioned packing instructions. This adequate instruction must be commensurate with the functions for which they are responsible.

3.3.2 Some data loggers / cargo tracking devices may not be powered by lithium batteries but other battery types, such as dry batteries or nickel-metal hydride batteries that are not restricted by the ICAO TI or DGR when the conditions as shown in the corresponding special provision in the ICAO TI or DGR are met (e.g. Special Provision A123 for dry battery and Special Provision A199).

3.3.3 Where the data loggers / cargo tracking devices are a type with transmitting functions, the shipper must ensure that:

a. They confirm with the manufacturer / supplier of the device that the device has passed all applicable tests to ensure that it does not pose a hazard to aircraft systems due to emission of electromagnetic radiation.
b. The device is fitted with two independent means of shutting down all transmitting functions when airborne.
c. The device has been approved by the airline on which the cargo will be transported.

3.3.4 All other dangerous goods acceptance, verification checks, documentation processes shall be in accordance with the operator's approved dangerous goods procedures manual.

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