



Transporting Methanol by Air in Canada

TECHNICAL BULLETIN

For projects in remote locations, such as Canada's Far North, transporting samples to the laboratory by air is often the only viable option. Although most environmental sampling containers are not considered dangerous goods, the transport of methanol by air when using Volatile Organic Compound (VOC) methanol vials requires special considerations.

Prepared with guidance from Transport Canada and a review of readily accessible industry standards, this technical bulletin provides a brief summary on safe and successful sampling programs that are in compliance with Transportation of Dangerous Goods (TDG) regulations. **This guide is not intended to replace necessary training and certification. Maxxam assumes no liability and recommends directly consulting TDG regulations or licensed consultants.**

Background

Transport Canada regulates the air transport of dangerous goods by incorporating the International Civil Aviation Organization Technical Instructions ([ICAO TI](#)). In addition to the ICAO TI's manual, the industry's technical standards and guidelines are also outlined in the [International Air Transport Association](#) (IATA) Dangerous Goods Regulation (DGR) manual. These standards specify that proper TDG training and certification is required prior to transporting methanol by air.

Because methanol is categorized as a Class 3–Flammable Liquid, special provisions are enforced when transporting any quantities of pure methanol. Small quantities of dangerous goods such as VOC methanol vials may be shipped as Excepted Quantities (EQ) as per IATA section 2.6. Dangerous goods shipped under the EQ scenario are exempt from some of the more detailed requirements of the ICAO / IATA TDG regulations.

Training Requirements

IATA training is mandatory for anyone managing the air transport of any quantity of methanol. The packer or shipper

must be IATA-trained; supervision by an IATA-trained individual is not acceptable.

IATA training and certification may be procured through designated third party companies specializing in national and international transportation of dangerous goods and hazardous materials. Organizations providing dangerous goods training in Canada can be found on Transport Canada's [website](#). Alternatively, the services of a third party TDG Consultant can be employed to assist and offer guidance with processing dangerous goods for transport.

Volume & Weight Limitations

According to the IATA Dangerous Goods Regulations for air shipment of Excepted Quantities, each outer package must not exceed a net quantity of 500mL of dangerous goods and the maximum inner net quantity is 30ml/30g.

Although each VOC vial may contain approximately 5-10g of soil and 10mL methanol, the contents of these vials may not be declassified as non-dangerous goods. The classification is based on the solution's flashpoint (<60°C for Class 3–Flammable Liquids). Studies performed by Maxxam have shown that the methanol in VOC vials containing soil

and methanol still has a flashpoint well below the 60°C limit.

This means that each outer package (e.g., Maxxam cooler) cannot contain more than 25-33 VOC vials (depending on the volume of soil / vial) to remain within the 500mL requirement. There is no limit to the number of separate outer packages that can be included per shipment, other than the provisions for the aircraft's carrying capacity.

Packaging Requirements & Applicable Documentation

Each outer package (i.e. cooler) must have an EQ label that lists the primary hazard class of the dangerous good (i.e. Class 3 for methanol). Unless listed elsewhere, the consignor and consignees' (sending and receiving party) name and address must also be placed on the package, in the label area. An example of the EQ label is provided below. The packaging must contain sufficient sorbent material to mitigate potential spillage of the entire volume of methanol being shipped and the package must also meet drop testing requirements outlined in the Regulations. Maxxam has completed these tests in-house to ensure the packaging meets the required durability requirements and therefore its recommended same sorbent material and packaging be used for the return trip.

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