



Standard Operating Guidance

Nitric Oxide for Aeromedical Transfers

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Purpose

This guideline covers the operational aspects of inhaled nitric oxide (iNO) on aeromedical transport.

Regulatory

Nitric oxide is classified as Dangerous Goods [UN Number:1956 Hazchem code:2T IATA class 2.2] but is exempt from the ICAO 'Technical Instructions' for medical purposes or when the flight is positioning for medical purposes with agreement of the operator.

Normal operations-generic equipment

- Equipment is secured appropriately.
- Equipment is fully functional in the transport environment (not compromised by altitude or vibration)
- Alarms are visual and auditory.
- Personnel are trained and competent to use the equipment.

Normal operations- iNO

- Fractional inspired oxygen concentration monitoring (alarms set)
- Appropriate iNO monitoring is in place (alarms set)
- Purging procedure to ensure minimum nitrogen dioxide exposure is followed.
- Appropriate environmental monitoring is considered.
- Patient response to nitric documented.
- Fifteen minute checks: iNO concentration, Nitric Oxide flow, cylinder pressure.

Abnormal operations- iNO leak

- Inform pilots and others on the team
- Switch off cylinder - as appropriate
- Increase FiO₂ - as appropriate
- Check vehicle cabin air exchange optimal
- Consider en route diversion

Notes

A complete discharge of a single full 'INOMax' cylinder within the smallest cabin (Augusta 109E helicopter) with no cabin air exchange is calculated to achieve a maximum concentration of 30ppm.

In larger fixed wing aircraft the maximum is likely to be approximately 12ppm.

Cabin air exchange can be increased within a helicopter by considering with the pilots the possibility of reducing airspeed to allow a window to be opened.

The UK Health Safety Executive (HSE) is currently reviewing occupational exposure limits. Since 1989 HSE had recommended Occupational Exposure Standards of 25 ppm (8 hour Time Weighted Average) with short term exposure of 35 ppm for nitric oxide and 3 ppm (8hour Time Weighted Average) with short term exposure 5 ppm for nitrogen dioxide.