

Packaging and Transportation of Oxygen Equipment

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1. SCOPE

The scope of this document is related to the particular needs of oxygen equipment with regards to packaging and transportation. The document provides guidance for handling chemical, gaseous and liquid oxygen equipment. It summarizes national and international regulations to be taken into account for transportation on land, sea and air and provides information on classification of hazardous material.

The aim of this document is to summarize information on packaging and transportation of oxygen equipment. Statements and references to regulations cited herein are for information only and should not be considered as interpretation of a law.

Processes to maintain cleanliness of components and subassemblies during processing and assembly or storage of work-in-progress are outside the scope of this document.

2. REFERENCES

The following publications form a part of this document to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of the other publications shall be the issue in effect on the date of the purchase order. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

ARP1176 Oxygen System and Component Cleaning and Packaging

2.2 EASA Publications

Available from European Aviation safety Agency, Postfach 10 12 53, D-50452 Koeln, Germany, Tel: +49-221-8999-000, www.easa.eu.int.

JAR-OPS 1 Subpart R Transport of Dangerous Goods By Air

2.3 FAA Publications

Available from Federal Aviation Administration, 800 Independence Avenue, SW, Washington, DC 20591, Tel: 866-835-5322, www.faa.gov.

DGAB-96-01 Prohibition of Oxygen Generators (Chemical) Aboard Passenger Aircraft.

DGAB-07-02 Chemical Oxygen Generators (COGs) and Chemical Oxygen Generators Installed in Equipment.

DGAB-00-01 Passenger Personal Liquid Oxygen Canister

2.4 IATA Publications

Available from International Air Transport Association, Publications Assistant, 800 Place Victoria, P.O. Box 113, Montreal, Quebec H4Z 1M1, Canada, Tel: 1-514-874-0202, www.iata.org.

IATA Dangerous Goods Regulations Edition 49, effective January 1, 2008.

2.5 ICAO Publications

Available from ICAO, Document sales Unit, 999 University Street, Montreal, Quebec H3C 5H7 Canada, Tel: +1-514-954-8022, <http://icaodsu.openface.ca/mainpage.ch2>.

The Safe Transport of Dangerous Goods by Air – Annex 18 to the Convention on International Civil Aviation.

ADR – The European Agreement concerning the International Carriage of Dangerous Goods

2.6 U.S. Government Publications

Available from the United States Government Printing Office, 732 North Capitol Street, NW, Washington, DC 20401, Tel: 202-512-0000, ecfr.gpoaccess.gov/.

Department of Transportation: Title 49 CFR of the Code of Federal Regulations (CFR) Parts 171, 172, 173, 175 and 178, in particular Appendix D and E.

3. DEFINITIONS

Associate Administrator - means the Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Materials Safety Administration.

Chemical Oxygen Generator - means a device containing a compound with chemically bonded oxygen which, when properly activated, will provide a supply of gaseous oxygen at a purity, rate, and quantity suitable for breathing.

Cylinder - means a pressure vessel designed for pressures higher than 40 psia and having a circular cross section.

Dangerous Goods - means articles or substances which are capable of posing a risk to health, safety, property or the environment and which are shown in the list of dangerous goods in the Technical Instructions or which are classified according to those instructions.

Hazardous Material - means a substance or material that may pose an unreasonable risk to health, safety, or property when transported in commerce.

Packaging - means a receptacle and any other components or materials necessary for the receptacle to perform its containment function.

Special Permit - means a document issued by the Associate Administrator permitting a person to perform a function that is not otherwise permitted.

UN Number - is the four- digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods to identify a substance or a particular group of substances.

4. GUIDANCE ON PACKAGING AND TRANSPORTATION

After cleaning components including the assembly parts and tubing, they must be taken from the work area and kept clean. Once cleaned parts are assembled into a clean component, all openings should be plugged or capped. Boxing the component is considered suitable. An example of this could be a breathing Regulator or tubing. If the parts are not assembled, but must be taken from the controlled work area for shipment, then special precautions must be taken for packaging to keep the components clean.

Any equipment that is shipped containing compressed, chemical or liquid oxygen must be treated as hazardous material.