



GUIDELINES FOR SEA TRANSPORT OF MULTIPLE ELEMENT GAS CONTAINERS (MEGCS) AND PORTABLE TANKS FOR GASES

Doc 41/24

Revision of Doc 41/18

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GUIDELINES FOR SEA TRANSPORT OF MULTIPLE ELEMENT GAS CONTAINERS (MEGCS) AND PORTABLE TANKS FOR TRANSPORT OF GASES

Published in June 2024

As part of a programme of harmonisation of industry standards, the European Industrial Gases Association (EIGA) has issued EIGA Doc 41, *Guidelines for Sea Transport of Multiple Element Gas Containers (MEGCS) and Portable Tanks for Gases*, jointly produced by members of the International Harmonisation Council.

This publication is intended as an international harmonised standard for the worldwide use and application of all members of the Asia Industrial Gases Association (AIGA), Compressed Gas Association (CGA), European Industrial Gases Association (EIGA), and Japan Industrial and Medical Gases Association (JIMGA). Each association's technical content is identical, except for regional regulatory requirements and minor changes in formatting and spelling.

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Amendments from 41/18

Section	Change
	This document was reaffirmed without any changes

Note: Technical changes from the previous edition are underlined

1 Introduction

This publication provides guidance for the safe sea transport of portable tanks and multiple element gas containers (MEGCs) containing gases of Class 2 that are compressed, liquefied, or refrigerated, see Appendix A.

The publication addresses product characteristics, general safety aspects, preparation for shipment, stowage on board ship, transport of containers, and emergency response.

Normally during sea transport, a skilled operator does not accompany these containers, so this publication has been written for the guidance of parties involved in their preparation and subsequent sea transportation. Compliance with this publication helps ensure their safe transport.

2 Scope and purpose

2.1 Scope

This publication applies to the sea transport of portable tanks and MEGCs that are used in the industrial, medical, and specialty gases industry for the worldwide transport of Class 2 gases.

2.2 Purpose

To provide guidelines for the safe sea transport of insulated and non-insulated portable tanks and MEGCs, to reduce the potential for unintentional releases of the contents for the duration of a defined journey, and to recommend actions in case of an accidental release.

3 Definitions

For the purpose of this publication, the following definitions apply.

3.1 Publication terminology

3.1.1 Shall

Indicates that the procedure is mandatory. It is used wherever the criterion for conformance to specific recommendations allows no deviation.

3.1.2 Should

Indicates that a procedure is recommended.

3.1.3 May

Indicates that the procedure is optional.

3.1.4 Will

Is used only to indicate the future, not a degree of requirement.

3.1.5 Can

Indicates a possibility or ability.

3.2 Technical definitions

3.2.1 Bundles of cylinders

Assembly of cylinders that are fastened together, are interconnected by a manifold, and transported as a unit. The total water capacity shall not exceed 3000 L, except that bundles intended for the transport of Class 2.3 gases shall be limited to 1000 L water capacity.

3.2.2 Compressed gas

Gas when packaged under pressure for transport is entirely gaseous at $-50\text{ }^{\circ}\text{C}$ ($-58\text{ }^{\circ}\text{F}$), this category includes all gases with a critical temperature less than or equal to $-50\text{ }^{\circ}\text{C}$ ($-58\text{ }^{\circ}\text{F}$).

3.2.3 Container

Portable tank or MEGC designed for multimodal use and fitted with devices permitting its ready stowage and handling particularly when being transloaded from one mode of transport to another.

3.2.4 Cylinders

Transportable pressure receptacles with a water capacity not exceeding 150L.

3.2.5 Holding time

Time that will elapse from the establishment of the initial filling condition until the pressure has risen due to heat influx to the lowest set pressure of the pressure limiting device(s).

3.2.6 Liquefied gas

Gas when packaged under pressure for transport is partially liquid at temperatures greater than $-50\text{ }^{\circ}\text{C}$ ($-58\text{ }^{\circ}\text{F}$). A distinction is made between:

- high pressure liquefied gas, which is a gas with a critical temperature between $-50\text{ }^{\circ}\text{C}$ and $65\text{ }^{\circ}\text{C}$ ($-58\text{ }^{\circ}\text{F}$ and $149\text{ }^{\circ}\text{F}$); and
- low pressure liquefied gas, which is a gas with a critical temperature greater than $65\text{ }^{\circ}\text{C}$ ($149\text{ }^{\circ}\text{F}$).

3.2.7 Multiple-element gas containers MEGCs

Multimodal assemblies of cylinders, tubes, and bundles of cylinders, which are interconnected by a manifold and assembled within a framework. The MEGC includes service equipment and structural equipment necessary for the transport of gases. MEGCs may be equipped with pressure relief devices (PRD).

3.2.8 Portable tank

Multimodal tank having a capacity greater than 450 L fitted with service equipment and structural equipment necessary for the transport of refrigerated and non-refrigerated liquefied gases. The portable tank shall be capable of being filled and discharged without the removal of its structural equipment. It shall possess stabilizing members external to the shell and shall be capable of being lifted when full. Road tank vehicles, rail tank-wagons, non-metallic tanks, and intermediate bulk containers (IBCs) do not meet the definition of a portable tank.

3.2.9 Portable tank for refrigerated liquefied gases

Thermally insulated multimodal tank having a capacity greater than 450 L fitted with service equipment and structural equipment necessary for the transport of refrigerated liquefied gases.

This means a construction that normally consists of either: