



GUIDE FOR THE DELIVERY OF BULK CARBON DIOXIDE

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Prepared by WG-17 Transport Safety

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Amendments to 56/09

Section	Change
	Editorial to align style with EIGA Style Manual
All	Complete re-write to re-style the publication from carbon dioxide manual to guide for the delivery of carbon dioxide

1 Introduction

Refrigerated liquified carbon dioxide has specific physical properties that present additional handling risks as compared to other cryogenic gases. This publication focuses on these risks and gives guidance on how they can be handled.

2 Scope and purpose

This publication contains information and guidance for transport function personnel dealing with carbon dioxide.

For further information on transport safety, refer to EIGA Info TS01 *Transport Safety Information, an Overview* [1].¹

Some of the information and guidance given may also be applicable to other bulk gases. These are however not specifically inside the scope of this publication.

This publication does not include carbon dioxide tank wagons (rail containers), however the principles of this publication may be used.

3 Definitions

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

3.1 Publications 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

Indicate 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 Anti-whip device

A safety device that prevents a hose from whipping (flailing) in case the coupling fails, such devices are also known as restraints or tethers. There are various methods such as cables, slings, safety ropes or chains.

¹ References are shown by bracketed numbers and are listed in order of appearance in the reference section.

3.2.2 Carbon dioxide

In general, the terms carbon dioxide and CO₂ are synonymous.

The terms dry ice, carbon dioxide snow and solid carbon dioxide are used synonymously.

3.2.3 Pressure

In this publication bar shall indicate gauge pressure unless otherwise noted i.e., (bar, abs) for absolute pressure and (bar, dif) for differential pressure.

3.2.4 Road tanker or tanker

In this publication, (road) tanker is a collective term used for mobile equipment with tanks that transport refrigerated liquefied carbon dioxide, for example tank-vehicles, rigid tankers, tank containers.

4 Specific properties of carbon dioxide

Safety data sheets for carbon dioxide (which differ depending on the physical state) are available from the gas supplier. They detail hazards, classification, transport information, etc. A short summary of the specific properties of carbon dioxide is given below. Additional information on carbon properties can be found in EIGA Doc 66, *Refrigerated Carbon Dioxide Storage at Users Premises* [2].

4.1 Physical properties

Carbon dioxide (CO₂) can be produced, stored or used in any of the three different physical states (gas, liquid, solid).

Figure 1 summarises the physical state of carbon dioxide when pressure and temperature vary.