

INTERNATIONAL STANDARD

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Refrigerated light hydrocarbon fluids — Liquefied natural gas — Procedure for custody transfer on board ship

*Hydrocarbures légers réfrigérés — Gaz naturels liquéfiés — Procédure de
transfert de garde à bord des navires*



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 13398 was prepared by Technical Committee ISO/TC 28, *Petroleum products and lubricants*, Subcommittee SC 5, *Measurement of light hydrocarbon fluids*.

Annex A forms an integral part of this International Standard. Annex B is for information only.

Introduction

Loading and discharging of LNG to/from an LNG carrier is a closed cycle operation performed by providing a vapour return line linking the tanks on board and on shore. This avoids displacement of vapour to the atmosphere. In addition, it may involve two or more shore tanks for easier cargo operation. Therefore, it is normal practice to implement the custody transfer on board the LNG carrier to ensure more accurate volumetric determination.

Refrigerated light hydrocarbon fluids — Liquefied natural gas — Procedure for custody transfer on board ship

1 Scope

This International Standard specifies methods of custody transfer of LNG on board ship, using a level gauge for determination of liquid level, thermometers for determination of liquid and/or vapour temperature and pressure gauges for determination of vapour pressure in cargo tanks.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 6568:1981, *Natural gas — Simple analysis by gas chromatography*.

ISO 6578:1991, *Refrigerated light hydrocarbon liquids — Static measurement — Calculation procedure*.

ISO 8309:1991, *Refrigerated light hydrocarbon fluids — Measurement of liquid levels in tanks containing liquefied gases — Electrical capacitance gauges*.

ISO 8310:1991, *Refrigerated light hydrocarbon fluids — Measurement of temperature in tanks containing liquefied gases — Resistance thermometers and thermocouples*.

ISO 8311:1989, *Refrigerated light hydrocarbon fluids — Calibration of membrane tanks and independent prismatic tanks in ships — Physical measurement*.

ISO 8943:1991, *Refrigerated light hydrocarbon fluids — Sampling of liquefied natural gas — Continuous method*.

ISO 10574:1993, *Refrigerated light hydrocarbon fluids — Measurement of liquid levels in tanks containing liquefied gases — Float-type level gauges*.

3 Definitions

For the purposes of this International Standard, the following definitions apply.

3.1 “boil-off” gas (BOG): Vapour generated from LNG which is stored under nearly atmospheric pressure conditions at low temperatures (under the influence of heat transfer a certain amount of LNG will evaporate or “boil-off”).