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**Natural gas — Natural gas for use  
as a compressed fuel for vehicles —**

Part 2:  
**Specification of the quality**

*Gaz naturel — Gaz naturel pour usage comme carburant comprimé  
pour véhicules —*

*Partie 2: Spécification de la qualité*



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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

In exceptional circumstances, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example), it may decide by a simple majority vote of its participating members to publish a Technical Report. A Technical Report is entirely informative in nature and does not have to be reviewed until the data it provides are considered to be no longer valid or useful.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO/TR 15403-2 was prepared by Technical Committee ISO/TC 193, *Natural gas*.

ISO/TR 15403 consists of the following parts, under the general title *Natural gas — Natural gas for use as a compressed fuel for vehicles*:

- *Part 1: Designation of the quality*
- *Part 2: Specification of the quality (Technical Report)*

## Introduction

In 2000, ISO 15403, *Natural gas — Designation of the quality of natural gas for use as a compressed fuel for vehicles*, was published.

The word “designation” was used in the title of this International Standard as no range of values, or limits could be stated as specifications or requirements for natural gas components in quality standards. This question was resolved during development of ISO 13686, *Natural gas — Quality designation*, which pertains to natural gas as supplied through transmission and distribution piping systems. The rationale for this stance is that, since natural gas is a natural product and does not need the sophisticated processing such as applied to crude oil, it is not possible to specify an exact gas quality. This is especially applicable to natural gas engines as enabled by precise fractionating in crude oil distillation (petrol/diesel).

During the review of ISO/CD 15403-1, comments regarding the need for “specifications” instead of “designation” were received from several countries including the Netherlands, Sweden and the United States. In addition, the text was circulated to CEN/TC 326, *Gas Supply for Natural Gas Vehicles*, which concluded that “the actual version is too general and does not help in the matter”.

Therefore, ISO/TC 193 decided to prepare a Technical Report as ISO/TR 15403-2 to give the existing information on specifications of compressed natural gas.

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# Natural gas — Natural gas for use as a compressed fuel for vehicles —

## Part 2: Specification of the quality

### 1 Scope

This Technical Report addresses the specifications of natural gas as a compressed fuel for vehicles as an addendum to ISO 15403-1. Specifically, it is intended to satisfy requests for quantitative data.

The following are critical items regarding gas composition:

- water content;
- sulfur compounds;
- particulate matter;
- higher hydrocarbons;
- CO<sub>2</sub>;
- free oxygen;
- glycol/methanol;
- oil content
- corrosive components;

This Technical Report pertains only to compressed natural gas as it enters the fuel containers on the vehicle. It does not apply to the natural gas delivered to a refuelling station. Any alteration of the natural gas supply composition to meet these specifications is clearly the responsibility of the refuelling station operator.

### 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 15403-1:2006, *Natural gas — Natural gas for use as a compressed fuel for vehicles — Part 1: Designation of the quality*

ISO 18453:2004, *Natural gas — Correlation between water content and water dew point*

SAE J1616, *Recommended Practice for Compressed Natural Gas Vehicles*