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**Petroleum products — Fuels  
(class F) — Considerations for  
fuel suppliers and users regarding  
marine fuel quality in view of the  
implementation of maximum 0,50 %  
sulfur in 2020**

*Produits pétroliers — Combustibles (classe F) — Considérations  
à l'usage des fournisseurs de combustibles et des utilisateurs pour  
la qualité des combustibles pour la marine en vue de la mise en  
application de la teneur maximale en soufre de 0,50 % en 2020*



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CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement. For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 28, *Petroleum and related products, fuels and lubricants from natural or synthetic sources*, Subcommittee SC 4, *Classifications and specifications*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## **Introduction**

This document was developed in cooperation with ship owners, ship operators, classification societies, fuel testing services, engine designers, marine fuel suppliers, traders, fuel additive suppliers and the petroleum industry, in view of the implementation of maximum 0,50 mass % S in marine fuels in 2020 for operation outside Emission Control Areas (ECAs).



# Petroleum products — Fuels (class F) — Considerations for fuel suppliers and users regarding marine fuel quality in view of the implementation of maximum 0,50 % sulfur in 2020

## 1 Scope

This document addresses quality considerations that apply to marine fuels in view of the implementation of maximum 0,50 mass % S in 2020 and the range of marine fuels that will be placed on the market in response to the international statutory requirements to reduce exhaust gas emissions. It defines general requirements that apply to all 0,50 mass % sulfur (S) fuels and confirms the applicability of ISO 8217 for those fuels.

...

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 8217:2017, *Petroleum products — Fuels (class F) — Specifications of marine fuels*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at <https://www.iso.org/obp>

— IEC Electropedia: available at <https://www.electropedia.org>

### 3.1

#### **stability**

stability of a residual fuel

resistance to the breakdown and precipitation of asphaltenic sludge despite being subjected to forces, such as thermal and ageing stresses, while handled and stored under normal operating conditions

### 3.2

#### **cold filter plugging point**

CFPP

highest temperature at which a given volume of distillate fuel fails to pass through a standardized filtration device in a specified time when cooled under standardized conditions

[SOURCE: [IP 309](#)]

### 3.3

#### **cloud point**

CP

temperature at which a cloud of wax crystals first appears in a transparent liquid when it is cooled under specified conditions

[SOURCE: [ISO 3015, 3.1](#), modified – In the definition, liquid has been specified to be “transparent”.]

### 3.4 Total sediment-aged

#### 3.4.1 potential total sediment

TSP

total sediment, determined by [ISO 10307-1:2009](#), after ageing a sample of residual fuel for 24 h at 100 °C under prescribed conditions

[SOURCE: [ISO 10307-2:2009, 3.1](#)]

#### 3.4.2 accelerated total sediment

TSA

total sediment, determined by [ISO 10307-1:2009](#), after dilution of a sample of residual fuel with hexadecane in the ratio of 1 ml per 10 g of sample under carefully controlled conditions, followed by storage for 1h at 100 °C

[SOURCE: [ISO 10307-2:2009, 3.2](#)]

### 3.5 microphone

transducer that converts sound into an electrical signal

[SOURCE: [ISO 22259:2019, 3.14](#)]

### 3.6 headphone

transducer that converts an electrical signal into sound, designed to be worn close to the ear

[SOURCE: [ISO 22259:2019, 3.17](#)]

### 3.7 headset

**term** headphones, **display** headphone **not resolved via ID** headphones combined with a *microphone* ([3.5](#))

[SOURCE: [ISO 20109:2016, 3.5](#)]

## 4 Main content

### 4.1 General

Here's where you place your main content.

### 4.2 Data models

The following data models are used by other data models specified in this document.



## 4.2.1 Basic data types

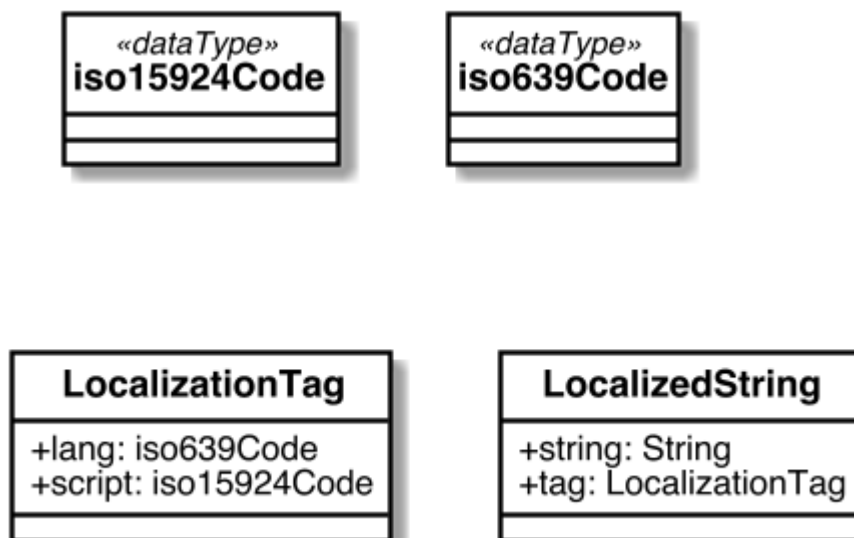


Figure 1

**Annex A**  
(normative)

**Annex One**

This is a normative annex.

**Annex B**  
(informative)

**Annex Two**

This is an informative annex.

## Bibliography

- [1] ISO 3015, *Petroleum and related products from natural or synthetic sources — Determination of cloud point*
- [2] ISO 3016, *Petroleum and related products from natural or synthetic sources — Determination of pour point*
- [3] ISO 10307-1:2009, *Petroleum products — Total sediment in residual fuel oils — Part 1: Determination by hot filtration*
- [4] ISO 10307-2:2009, *Petroleum products — Total sediment in residual fuel oils — Part 2: Determination using standard procedures for ageing*
- [5] ISO 20109:2016, *Simultaneous interpreting — Equipment — Requirements*
- [6] ISO 22259:2019, *Conference systems — Equipment — Requirements*
- [7] IP 309, *Diesel and domestic heating fuels — Determination of cold filter plugging point*
- [8] INTERNATIONAL MARITIME ORGANIZATION (IMO), Marine Pollution (MARPOL) Annex VI — as amended. IMO Protocol of 1997, as amended by resolution MEPC.176(58) in 2008, to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 related thereto

