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Foreword

This Japanese Industrial Standard has been revised by the Minister of Economy, Trade and Industry, through deliberations at the Japanese Industrial Standards Committee in accordance with the Industrial Standardization Act. This edition replaces the previous edition (**JIS S 4802** : 2018), which has been technically revised.

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Utility lighters — Safety specifications

WARNING This Standard does not purport to address all the safety concerns, if any, associated with its use. It is the responsibility of the user of this Standard to establish appropriate safety and health practices and to determine the applicability of any legal restrictions.

Introduction

This Japanese Industrial Standard has been prepared based on **ISO 22702** : 2018, Edition 2, with some modifications of the technical contents for convenience of users in Japan and to reflect the realities of product sales in Japan.

The dotted underlines indicate changes from the corresponding International Standard. A list of modifications with the explanations is given in Annex JA.

Utility lighters, being flame-producing devices, can, as do all flame sources, present a potential hazard to the user. The safety specifications given in this Standard cannot eliminate all hazards, but are intended to minimize potential hazards of utility lighters to users.

1 Scope

This Standard specifies requirements for utility lighters to ensure a reasonable degree of safety for normal use or reasonably foreseeable misuse of such lighters by users. This Standard applies to all flame-producing products commonly known as utility lighters also known as grill lighters, fireplace lighters, lighting rods or gas matches (hereafter referred to as utility lighters). It does not apply to matches and flame-producing products intended for igniting cigarettes, cigars and pipes.

NOTE 1 Requirements for lighters for igniting cigarettes, cigars and pipes are provided in **JIS S 4801**.

NOTE 2 The International Standard corresponding to this Standard and the symbol of degree of correspondence are as follows.

ISO 22702 : 2018 *Utility lighters — Safety specifications* (MOD)

In addition, symbols which denote the degree of correspondence in the contents between the relevant International Standard and **JIS** are IDT (identical), MOD (modified), and NEQ (not equivalent) according to **ISO/IEC Guide 21-1**.

2 Normative references

Part or all of the provisions of the following standards, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

JIS K 2240 *Liquefied petroleum gases*

NOTE Normative reference in the corresponding International Standard : ISO 7941 *Commercial propane and butane — Analysis by gas chromatography*

UL 1439 *Tests for Sharpness of Edges on Equipment*

3 Terms and definitions

For the purpose of this Standard, the following terms and definitions apply.

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

- ISO Online browsing platform : available at <https://www.iso.org/obp>
- IEC Electropedia : available at <http://www.electropedia.org/>

3.1

valve

component of a utility lighter (3.6) that controls the input or release of fuel (3.9)

3.2

nozzle

end of the fuel discharge system

3.3

flame height

linear distance from the tip of the visible flame (3.19) to the end of the shield (3.12), in the absence of a shield, from the tip of the visible flame to the bottom of the exposed wick or the top of the burner valve orifice

3.4

flaring

variation of flame height (3.3) from the steady-state flame condition

3.5

ignite

to produce a flame (3.19) with a utility lighter (3.6) by activating the self-contained ignition and fuel release systems of that utility lighter (3.6) in the intended manner

3.6

utility lighter

hand-held, flame-producing device with a manually-operated ignition system, 100 mm or greater in length when in the fully extended position, employing a fuel (3.9), used primarily to ignite items such as candles, fuel for fireplaces, charcoal- or gas-fired grills, camp stoves, lanterns, fuel-fired appliances or devices and/or pilot lights

3.7

adjustable utility lighter

utility lighter (3.6) that is received by the consumer with a mechanism for the user to manually vary the flame height (3.3)

3.8

non-refillable utility lighter

utility lighter that is received by the user with a supply of fuel and that is not intended to be refuelled

Note 1 to entry It is also called a disposable utility lighter.

3.9

fuel

n-butane, isobutane, propane or other liquefied hydrocarbon, or a mixture containing any of these, whose vapour pressure at 24 °C exceeds a gauge pressure of 103 kPa

3.10

non-adjustable utility lighter

utility lighter (3.6) that has a flame height (3.3) preset by the manufacturer and is not provided with a mechanism to adjust the flame height (3.3)

3.11

refillable utility lighter

utility lighter (3.6) that is intended to be refuelled either by transferring fuel (3.9) from an external container or by inserting a new pre-packaged fuel reservoir

3.12

shield

structure that totally or partially surrounds the nozzle (3.2) of the utility lighter (3.6)

3.13

sustained self-ignition

propagation of a flame (3.19) by other than deliberate manual operation, such as by dropping the utility lighter (3.6), so as to cause the ignition system (3.16) to be activated and the flame to continue to burn

3.14

spitting

flame phenomenon of a utility lighter (3.6) wherein the escape of non-evaporated liquid fuel produces a shower of burning liquid droplets which separate from the main flame

Note 1 to entry It is also called sputtering.

3.15

fuel reservoir

structure that stores the fuel (3.9) prior to release

3.16

ignition system

system that generates a spark to ignite the fuel (3.9), such as a piezo mechanism or battery

3.17

premixing burner utility lighter

gas utility lighter (3.6) in which fuel (3.9) and air are mixed before being supplied for combustion

Note 1 to entry It is also called an internal combustion utility lighter, turbo lighter or jet lighter.

3.18

postmixing burner utility lighter

gas utility lighter (3.6) in which fuel (3.9) is supplied for combustion and air is supplied at the point of combustion

Note 1 to entry It is also called a normal flame utility lighter.

3.19

flame

result of combustion of fuel (3.9) that produces heat and often light which could be visible to the naked eye under normal or subdued lighting conditions

3.20

dual flame type utility lighter

utility lighter (3.6) that employs a burner valve system(s) that produces more than one type of flame (premixing and postmixing)

Note 1 to entry This system could produce flame independently and separately (one flame type at a time), or dependently and concurrently (multiple flame types at a time).

3.21

multiple flame type utility lighter

utility lighter (3.6) that employs a burner valve system(s) that produces more than one flame of the same type of flame (premixing or postmixing)

Note 1 to entry This system could produce flame independently and separately (one flame at a time), or dependently and concurrently (multiple flames at a time).

4 Functional requirements

4.1 Flame generation

In order to minimize the possibility of inadvertent ignition or self-ignition, utility lighters shall require a deliberate manual operation to produce a flame. These operations shall conform to at least one of the following requirements :

- a) a system such that positive action on the part of the user is required to generate and maintain a flame;
- b) a system that requires two or more independent actions by the user to generate a flame;
- c) a system that requires an actuating force equal to or greater than 15 N to generate a flame (see Figure 1).

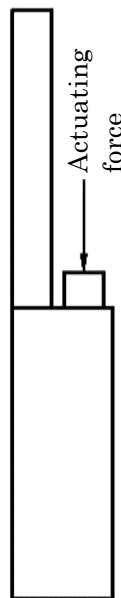


Figure 1 Block diagram showing a typical example of test equipment for measuring the flame generation actuating force

4.2 Flame heights

4.2.1 General

The maximum attainable flame height for utility lighters shall be limited with a setting or by product design, or both. For adjustable-flame-height utility lighters, the maximum flame height that a user will obtain on first activating the utility lighter without adjustment shall also be limited. These limits shall conform to the following requirements when tested in accordance with 8.2.

4.2.2 Non-adjustable postmixing burner utility lighters

Non-adjustable postmixing burner utility lighters shall have, in the user's hands, a maximum attainable flame height of no more than 100 mm when the flame is directed vertically upward when tested in accordance with 8.2.

4.2.3 Non-adjustable premixing burner utility lighters

Non-adjustable premixing burner utility lighters shall have, in the user's hands, a maximum attainable flame height of no more than 75 mm when the flame is directed vertically upward when tested in accordance with 8.2.

4.2.4 Adjustable postmixing burner utility lighters

Adjustable postmixing burner utility lighters shall not be capable of producing a flame height greater than 150 mm when the flame is directed vertically upward, when deliberately adjusted by the user to the manufacturer's design limit for maximum flame height and when tested in accordance with 8.2.

4.2.5 Adjustable premixing burner utility lighters

Adjustable premixing burner utility lighters shall not be capable of producing a flame height greater than 75 mm when the flame is directed vertically upward, when deliberately adjusted by the user to the manufacturer's design limit for maximum flame height and when tested in accordance with 8.2.

4.2.6 Adjustable postmixing burner utility lighters (flame height on first ignition)

Adjustable postmixing burner utility lighters shall have the flame height adjusted by the manufacturer in such a manner that the utility lighter, when first ignited by the user without changing the adjustment, will not produce a flame height in excess of 100 mm when the flame is directed vertically upward and when tested in accordance with 8.2.

4.2.7 Adjustable premixing burner utility lighters (flame height on first ignition)

Adjustable premixing burner utility lighters shall have the flame height adjusted by the manufacturer in such a manner that the utility lighter, when first ignited by the user without changing the adjustment, will not produce a flame height in excess of 60 mm when the flame is directed vertically upward and when tested in accordance with 8.2.

4.2.8 Adjustable postmixing burner utility lighters (flame height at lowest setting)

Adjustable postmixing burner utility lighters shall be capable of producing a flame not in excess of 75 mm with the flame directed vertically upward, when set at the lowest possible flame height and tested in accordance with 8.2.

4.2.9 Adjustable premixing burner utility lighters (flame height at lowest setting)

Adjustable premixing burner utility lighters shall be capable of producing a flame not in excess of 50 mm with the flame directed vertically upward, when set at the lowest possible flame height and tested in accordance with 8.2.

4.2.10 Dual flame type utility lighters

Dual flame type utility lighters, for each type of flame of a dual flame type utility lighter, each flame height shall conform to the corresponding requirement for that type of flame provided in 4.2.1 to 4.2.9. If measuring the height of each type of flame by covering the burner valve orifice with a fire-resistant tape or other simple means is not