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Kerosene — Specification

In order to match with technological development and to keep continuous progress in industries, Standards are subject to periodic review. Users shall ascertain that they are in possession of the latest edition

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Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Requirements	2
4.1 General requirement	2
4.2 Specific requirements	2
5 Packaging and labelling	3
5.1 Packaging	3
5.2 Labelling	3
6 Sampling	3
7 Test methods	3

Foreword

Rwanda Standards are prepared by Technical Committees and approved by Rwanda Standards Board (RSB) Board of Directors in accordance with the procedures of RSB, in compliance with Annex 3 of the WTO/TBT agreement on the preparation, adoption and application of standards.

The main task of technical committees is to prepare national standards. Final Draft Rwanda Standards adopted by Technical committees are ratified by members of RSB Board of Directors for publication and gazettment as Rwanda Standards.

DRS 352 was prepared by Technical Committee RSB/TC 024, *Chemicals and Consumer Products*.

In the preparation of this standard, reference was made to the following standard:

IS 1459:1974 Specifications for Kerosene

The assistance derived from the above source is hereby acknowledged with thanks.

Committee membership

The following organizations were represented on the Technical Committee on Chemicals and Consumer Products (RSB/TC 024) in the preparation of this standard.

ALYVO Rwanda Ltd

AMACO Paints Ltd

Ameki Color Ltd

Better home Ltd

Crown Paints Rwanda Ltd

IKIREZI Natural Products

Integrated Polytechnic Regional Centre-Kigali (IPRC-Kigali)

Inyange Industries Ltd

National Industrial Research and Development Agency (NIRDA)

Rwanda Environment Management Authority (REMA)

Rwanda Plastic Industry Ltd

Sigma Paints

SOPYRWA

SRB Investments (R) Ltd

Star Construction and Consultancy Ltd

THE IHANGANE PROJECT (TIP)

University of Kibungo (UNIK)

University of Rwanda-College of Science and Technology (UR-CST)

Water and Sanitation Corporation Ltd (WASAC Ltd)

Zirumuze Cooperative

Rwanda Standards Board (RSB) – Secretariat

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Kerosene — Specification

1 Scope

This Draft Rwanda Standard gives requirements and methods of sampling and test for kerosene intended for use as illuminant and as fuel.

This document covers two grades of kerosene suitable for use in critical kerosene burner applications:

- a) N° 1-K; and
- b) N° 2-K.

This document is not applicable to kerosene used in jet engine.

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.

ASTM D3699 *Standard Specifications for Kerosine*

RS ISO 3170 *Petroleum liquids — Manual sampling*

ASTM F839 *Standard Specification for Cautionary Labeling of Portable Gasoline, Kerosene, and Diesel Containers for Consumer Use*

ASTM D56 *Standard Test Method for Flash Point*

ASTM D86 – 16a *Standard Test Method for Distillation of Petroleum products*

ASTM D445 *Standard Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and Calculation of Dynamic Viscosity)*

ASTM D2622 – 16 *Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-ray Fluorescence Spectrometry*

ASTM D3227 – 16 *Standard Test Method for (Thiol Mercaptan) Sulfur in Gasoline, Kerosine, Aviation Turbine, and Distillate Fuels (Potentiometric Method)*

ASTM D130 – 12 *Standard Test Method for Corrosiveness to Copper from Petroleum Products by Copper Strip Test*

ASTM D2386 *Standard Test Method for Freezing Point of Aviation Fuels*

ASTM D187-08(2013) *Standard Test Method for Burning Quality of Kerosine*

ASTM D156 *Standard Test Method for Saybolt Color of Petroleum Products*

3 Terms and definitions

3.1

No. 1-K

special low-sulfur grade kerosene suitable for use in non flue-connected kerosene burner appliances and for use in wick-fed illuminating lamps

3.2

No. 2-K

regular grade kerosene suitable for use in flue-connected burner appliances and for use in wick-fed illuminating lamps

3.3

additive

material added to kerosene, usually in small amounts, to impart or enhance desirable properties

3.4

kerosene

mixture of liquid hydrocarbons obtained by distilling petroleum, bituminous shale, or the like, and widely used as a fuel, cleaning solvent, etc.

3.5

saybolt color

scale used for grading light coloured petroleum products including aviation fuels, kerosene, naphthas, white mineral oils, hydrocarbon solvents and petroleum waxes

4 Requirements

4.1 General requirement

The product shall be a refined petroleum distillate consisting of a homogeneous mixture of hydrocarbons essentially free of water, inorganic acidic or basic compounds, and excessive amounts of particulate contaminants.

Note Additive usage can be established by mutual agreement of the supplier and the purchaser.

4.2 Specific requirements

The product shall also comply with the requirements given in table 1, when tested according to the appropriate methods.

Table 1 — Detailed Requirements for kerosene

S/N	Parameter	Requirements	Methods of test
1.	Flash Point °C, min	38	ASTM D56
2.	Distillation temperature, °C 10% volume recovered, max Final boiling point, max	205 300	ASTM D86
3.	Kinematic viscosity at 40 °C, mm ² /s Min max	1.0 1.9	ASTM D445
4.	Sulphur, % mass No. 1-K, max No. 2-K, max	0.04 0.30	ASTM D2622
5.	Mercaptan sulfur, % mass, max	0.003	ASTM D3227
6.	Copper strip corrosion rating max, 3 h at 100°C	Class 3	ASTM D130
7.	Freezing point, °C, max	−30	ASTM D2386
8.	Burn Quality Time of Burning Rate of Burning Chimney Appearance Flame Characteristics (comparison of properties from beginning and end of test)	Min. 16h continuous after 1 st weighing 18 to 26 after 1 st weighing Ma. Light white deposit (at end of test) Max. variance of flame width – 6 mm Max. variance of flame height lowered – 5 mm	ASTM D187 ASTM IP 10 ASTM D187 ASTM D187
9.	Saybolt color, min	+ 16	ASTM D156

5 Packaging and labelling

5.1 Packaging

The product shall be packaged in suitable containers, or in accordance with agreement between the purchaser and the supplier.

5.2 Labelling

5.2.1 The product shall be supplied in accordance with the marking and delivery instructions given by the purchaser.

5.2.2 Each container shall be labelled in accordance with ASTM F839.

6 Sampling

Unless otherwise specified in commodity specifications, samples shall be taken in accordance with ISO 3170.

7 Test methods

The requirements enumerated in this specification shall be determined in accordance with the ASTM methods indicated in table 1.

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