CDC15 (4604) P3 Aviation turbine fuel (Jet A-1) – Specification (Rev. of TZS 666:2001)

0. Foreword

This Tanzania Standard was prepared under the direction of Petroleum and Petroleum Products Technical Committee which is under the supervision of Chemicals Divisional Standards Committee.

For the purpose of deciding whether a particular requirement of this Tanzania Standard is complied with, the final value, observed or calculated, expressing the result of a test or an analysis, shall be rounded off in accordance with TZS 4:1979 (see clause 2).

In the preparation of this Tanzania Standard, assistance was derived from

a) British Ministry of Defence Standard DEF STAN 91-091 for Turbine Fuel, Kerosene Type, Jet A-1, NATO Code F-35, Joint Service Designation: AVTUR.

b) ASTM Standard Specification D 1655 for Aviation Turbine Fuels "Jet A-1"

1 Scope

This Tanzania Standard specifies requirements of the Jet A-1 type of aviation turbine fuel which is a special kerosene cut.

2 Normative references

This Tanzania Standard makes reference to the following publications:

2.1. ASTM D 86, *Test for distillation of petroleum products.*

2.2. ASTM D 1219, *Test for mercaptan sulphur in aviation turine fuels (colour-indicator method).*

2.3. ASTM D3227, *Potentiometric titration method.*

2.4. ASTM D 1266, *Test for sulphur in petroleum products (lamp method).*

2.5. ASTM D 1298, *Test for density, specific gravity or API gravity of crude petroleum and liquid petroleum products by hydrometer method.*

2.6. ASTM D 1322, *Test for smoke point of aviation turbine fuels.*

2.7. ASTM D 1740, *Test for luminometer numbers of aviation turbine fuels.*

2.8. ASTM D 1840,*Test for naphthalene hydrocarbons in aviation turbine fuels by ultraviolet spectrophotometer.*

2.9. ASTM D 2386, *Test for freezing point of aviation fuels.*

2.10. ASTM D 2550, *Test for water separation characteristics of aviation turbine fuels*

2.11. ASTM D 130, *Detection of copper corrosion from petroleum products by the copper strip.*

2.12. IP 227 Silver *corrosion by aviation turbine fuel.*

2.13. IP 273, Total *acidity in aviation turbine fuel.*

2.14. ASTM D 156, *Test for Saybolt colour of petroleum products (Saybolt chronometer method).*

2.15. ASTM D 240, *Test for heat of combustion of liquid hydrocarbon fuel (general bomb method).*

2.16. ASTM D 445, *Test for viscosity of transparent and opaque liquid (kinematic and dynamic viscosities).*

2.17. ASTM D 484, *Specification for hydrocarbon dry cleaning solvents.*

2.18. ASTM D 611, *Test for aniline point and mixed aniline point of petroleum products and hydrocarbon solvents.*

2.19. ASTM D 1094, *Test for water reaction of aviation fuels additive.*

2.20. ASTM D 2624, *Test for electrical conductivity of aviation fuels containing a static dissipator*

2.21. ASTM D 3241, *Test for thermal oxidation stability of aviation turbine fuels (JFTOT*

2.22. ASTM D 381, *Test for existent gum in fuels by jet evaporation.*

2.23. ASTM D 3828, Test *method for flash point by Setaflash closed tester. Procedure.*

2.24. TZS 668, *Petroleum industry - Terminology*

3 Terms and definitions

For the purpose of this Tanzania Standard, the following definitions and those given in TZS 668/ISO 1998 Part 1(see clause 2) shall apply:

3.1 **aviation kerosine**: Kerosine designed for use in aviation.

3.2 **jet fuel**: Petroleum distillate used as a source of energy in systems of jet propulsion and by extensions, fuel suitable for use in air-craft gas turbines.

3.3 **kerosene-type-jet fuel:** Aviation gas turbine having a distillation range which normally falls between 150°C and 300°C.

3.4 **natural gasoline**: Low boiling liquid petroleum extract from natural gas.

NOTE - In its “wild” or unstabilized condition, it contains fairly high proportions of propane and butanes. The removal of the propane yields a stabilized gasoline.

4 Requirements

4.1 General

4.1.1 This specification, unless otherwise provided, prescribes the requirement of aviation turbine fuel at the time and place of delivery.

4.1.2 Aviation turbine fuel, shall consist of blends of refined hydrocarbons derived from crude petroleum, natural gasoline, or blends thereof with synthetic hydrocarbons.

4.1.3 The aviation turbine fuel herein specified shall be free from undissolved water, mineral

acidity, sediment and suspended water. The odour of fuel shall not be nauseating or irritating. No substance of known dangerous toxicity under usual conditions of handling and use shall be present, except as permitted herein.

4.2 Detailed requirements

The aviation turbine fuel (JET A-1) specifications shall conform to the latest version of Aviation Fuel Quality Requirements for Jointly Operated Systems (AFQRJOS) issued by Joint Inspection Group (JIG)

5 Approval

Unless otherwise agreed upon by the seller and the purchaser, the composition and methods of processing of the fuel shall be substantially the same as those of fuel which has been approved by the purchaser; Tanzania Bureau of Standards or by any agencies, on the basis of full-scale bench and flights test or flight-service experience. If any basic changes in the fuel composition or method of processing are made, the seller shall notify the purchaser and Tanzania Bureau of Standards who will determine if the change warrants retesting and reapprove of the fuel.

6 Reports

The type and number of reports to ensure conformance with the requirements of this Tanzania Standard shall be mutually agreed upon by the purchaser and the supplier of the aviation turbine fuel.

7 Conformity

The seller shall declare the conformity of the product as specified in a latest version of joint fueling system check list in Aviation Fuel Quality Requirements for Jointly Operated Systems (AFQRJOS) issued by Joint Inspection Group (JIG)