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شرکت ملی گاز ایران
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امور تدوین استانداردها

IGS

مشخصات فنی خرید

روغن توربین

Turbine Lubricating Oil



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شرکت ملی گاز ایران



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مدیر محترم پژوهش و فناوری

باسلام،

به استحضار می‌رساند در جلسه ۲۰۴۸ مورخ ۱۴۰۲/۱۲/۰۸ هیأت مدیره، نامه شماره ۲۰۵۳۴۷ مورخ ۱۴۰۲/۱۱/۱۱ مدیر پژوهش و فناوری درمورد تصویب نهایی مقررات فنی شرکت ملی گاز ایران به شرح زیر مطرح و مورد تصویب قرار گرفت.

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FOREWORD

This standard is intended to be mainly used by NIGC and contractors and has been prepared on interpretation recognized standards, technical documents, knowledge, backgrounds and experiences in gas industries at national and international levels.

Iranian gas standards (IGS) are prepared, reviewed and amended by technical standard committees within NIGC Standardization division and submitted to the NIGC's "STANDARDS COUNCIL" for approval.

IGS Standards are subject to revision, amendment or withdrawal, if required, thus the latest edition of IGS shall be checked/inquired by NIGC users.

This standard must not be modified or altered by the end users within NIGC and her contractors. Any deviation from normative references and/ or well known manufacturers specifications must be reported to Standardization division.

Any comments from concerned parties on NIGC distributed IGS are welcome to technical standards committees and will receive serious attention and consideration should a revision to standards is recommended.

GENERAL DEFINITIONS

Throughout this standard the following definitions , where applicable , should be followed :

- 1- "STANDARDIZATION DIV." has been organized to deal with all aspects of industrial standards in NIGC . Therefore , all queries for clarification or amendments are requested to be directed to mentioned div.
- 2- "COMPANY": refers to National Iranian Gas Company .
- 3- "SUPLIER": refers to a firm who will supply the service, equipment or material to IGS specification whether as the prime producer or manufacturer or a trading firm.
- 4- "SHALL": is used where a provision is mandatory.
- 5- "SHOULD": is used where a provision is advised only.
- 6- "MAY": is used where a provision is completely discretionary.

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1. Scope

This standard specification covers the minimum requirements for lubricating oils used in steam and gas turbine lubrication systems in four grades of differing viscosity ranges. Oils shall be refined petroleum oils, formulated to provide rust protection and oxidation stability and may contain selective additives as needed to control foam, wear, demulsibility, etc. and as required to comply with the requirements of this standard specification.

Note 1: This standard specification covers the minimums requirement for lubricating oils used in compressors lubricating system when oil tank is common between turbine and compressor.

Note 2: The choice of oil and its viscosity grade should comply with the turbine/ compressor manufacturer's recommendations.

2. References

Throughout this standard, the following dated and undated standards/codes are referred to. These referenced documents shall be, to the extent specified herein, a part of this standard. For dated references, the edition cited applies. For undated references, the latest edition of the referenced documents applies.

ASTM D 92 (2018) "Test Method for Flash and Fire Points by Cleveland Open Cup Tester"

ASTM D 97 (2022) "Test Method for Pour Point of Petroleum Products"

ASTM D 130 (2019) "Test Method for Corrosiveness to Copper from Petroleum Products by Copper Strip Test"

ASTM D 445 (2021^{⁽²⁾}) "Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and Calculation of Dynamic Viscosity)"

ASTM D 665 (2019) "Test Method for Rust - Preventing Characteristics of Inhibited Mineral Oil in the Presence of Water"

ASTM D 892 (2018^{⁽¹⁾}) "Test Method for Foaming Characteristics of Lubricating Oils"

ASTM D 943 (2017) "Test Method for Oxidation Characteristics of Inhibited Mineral Oils"

ASTM D 974 (2022) "Test Method for Acid and Base Number by Color-Indicator Titration"

ASTM D 1298 (2017) "Test Method for Density, Relative Density, or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method"

ASTM D 1401 (2021) "Test Method for Water Separability of Petroleum Oils and Synthetic Fluids"

- ASTM D 1500 (2017)** "Test Method for ASTM Color of Petroleum Products (ASTM Color Scale)"
- ASTM D 2270 (2016)** "Practice for Calculating Viscosity Index from Kinematic Viscosity at 40°C and 100°C"
- ASTM D 2272 (2022)** "Test Method for Oxidation Stability of Steam Turbine Oils by Rotating Pressure Vessel"
- ASTM D 2273 (2016)** "Test Method for Trace Sediment in Lubricating Oils"
- ASTM D 2422 (2018)** "Classification of Industrial Fluid Lubricants by Viscosity System"
- ASTM D 3427 (2019)** "Test Method for Air Release Properties of Petroleum Oils"
- ASTM D 4057 (2022)** "Practice for Manual Sampling of Petroleum and Petroleum Products"
- ASTM D 4304 (2022)** "Specification for Mineral and Synthetic Lubricating Oil Used in Steam or Gas Turbines"
- ASTM D 4310 (2022)** "Test Method for Determination of Sludging and Corrosion Tendencies of Inhibited Mineral Oils"
- ASTM D 5182 (2019)** "Test Method for Evaluating the Scuffing Load Capacity of Oils (FZG Visual Method)"
- ASTM D 5185 (2018)** "Test Method for Multielement Determination of Used and Unused Lubricating Oils and Base Oils by Inductively Coupled Plasma Atomic Emission Spectrometry (ICP-AES)"
- ASTM D 6304 (2020)** "Test Method for Determination of Water in Petroleum Products, Lubricating Oils, and Additives by Coulometric Karl Fischer Titration"
- ASTM D 6595 (2022)** "Test Method for Determination of Wear Metals and Contaminates in Used Lubricating Oils or Used Hydraulic Fluids by Rotating Disc Electrode Atomic Emission Spectrometry"
- ASTM D 7873 (2017)** "Test Method for Determination of Oxidation Stability and Insolubles Formation of Inhibited Turbine Oils at 120°C without the Inclusion of Water (Dry TOST Method)"
- IGS-R-CH-053** "Transportation, Storage, Charge and Discharge of Lubricating Oils"
- INSO 3049 (2015)** "Lubricating oils -Turbine oils - Specifications"
- ISO 4406 (2021)** "Method for coding the level of contamination by solid particles"
- ISO 8068 (2006)** "Specification for Lubricating Oils for Turbines"

3. Definitions

3.1 Rust:

A special case of corrosion that can be visually observed on the surface of round steel test rods as reddish-brown discoloration or small black spots.

3.2 Wear Metal:

Material resulting from damage to a solid surface due to relative motion between that surface and a contacting substance or substances.