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شرکت ملی گاز ایران
مدیریت پژوهش و فناوری
امور تدوین استانداردها

IGS

مشخصات فنی خرید

کاتالیست مرکاپتان زدا

Mercaptan Oxidation Catalyst



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شرکت ملی گاز ایران



دفتر مدیرعامل



ابلاغ مصوبه هیأت مدیره



مدیر محترم پژوهش و فناوری



باسلام،
به استحضار می‌رساند در جلسه ۱۹۴۸ مورخ ۱۴۰۰/۰۹/۰۱ هیأت مدیره،
نامه شماره گ.۹/۰۰۰/۹۱۸۴۶ مورخ ۱۴۰۰/۰۷/۲۶ مدیر پژوهش و فناوری در مورد تصویب نهایی
مقررات فنی شرکت ملی گاز ایران به شرح زیر مطرح و مورد تصویب قرار گرفت.



۱- مشخصات فنی کاتالیست های واحد مرکاپتان زدا IGS-M-CH-052(0)



۲- مشخصات فنی کاتالیست های واحد بازیافت گوگرد IGS-M-CH-054(1)



۳- مشخصات فنی خرید تجهیزات گرم کننده گاز غیرمستقیم آبی نوع مشعل دمنده دار IGS-M-PM-106(2)



۴- مشخصات فنی خرید کنتورهای نوع توربینی IGS-M-IN-102(3)



۵- مشخصات فنی خرید اتصال سه راهی انشعاب گرم IGS-M-PL-033(2)



۶- مشخصات فنی خرید اتصالات جوش لب به لب در اندازه های ۱/۲ الی ۵۶ اینچ IGS-M-PL-022(2)



۷- مشخصات فنی و نقشه های اجرایی انشعابات در شبکه های توزیع گازرسانی پلی اتیلن IGS-C-DN-011(0)



الهام ملکی

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Foreword

This standard specification replaces IGS-R-CH-052(0) that 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 NIGC users shall checked/inquired the latest edition of IGS. The end users within NIGC and her contractors must not modify or alter this standard. Any deviation from normative references and / or well-known manufacturer's specifications must report 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." is organized to deal with all aspects of industry standards in NIGC. Therefore, all enquiries for clarification or amendments are requested to be directed to mentioned division.
- 2- "COMPANY": refers to National Iranian Gas Company (NIGC).
- 3- "SUPPLIER": 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 provides technical procedure for selection/substitution new mercaptan oxidation catalyst that used for removing mercaptans from natural gas, LPG, butane and propane condensate.

2. REFERENCES

Throughout this standard specification, the following standard is referred to The editions of this standard that is in effect at the time of issues of this standard specification (2012) shall, to the extent specified herein, form part of this standard specification. The purchaser and the manufacturer/supplier shall mutually agree upon the applicability of changes in standard that occur after the date of this standard specification.

ISO 9001 (2008) "Quality Systems – Model for Quality Assurance in Design, Development, Production, Installation and Servicing"

UOP 954 (2011) "Loss on Ignition (LOI) for fresh, regenerated, Used, and spent Catalysts, Catalyst supports and Adsorbant"

UOP 163 (2011) "Hydrogen Sulfide and Mercaptan Sulfur in liquid Hydrocarbons by potentiometric Titration"

ASTM D2622 (2010) "Test method for Sulfur in Petroleum products by wavelength Dispersive X-ray Fluorescence spectrometry"

3. DEFINITIONS

Mercaptan Oxidation Catalyst

It is a proprietary catalytic for chemical process that used in natural gas, LPG, butane and propane processing plants to remove mercaptans by converting them to liquid hydrocarbon disulfides.

Extraction Unit

A gas extraction unit is normally consisting of a combination column that includes prewash, extraction and water wash section while for liquids is normally including only an extractor column.

Regeneration Unit

A caustic regeneration system will convert the extracted mercaptans to disulfide oil that is separated and removed while the regenerated caustic is returned to the extraction unit.

Technical Approved

The technical approved is the first step for qualification of catalyst which technical information has been evaluated and approved by technical division.

Laboratory Approved

The laboratory approved is the second step for qualification of catalyst, which has passed laboratory tests.

Test Field Approved

The test field approved is the third step for qualification of catalyst, which has passed the operational test.

4. SYSTEM DESIGN

The manufacturer/supplier shall submit catalyst to be able oxidation of mercaptans to disulfides in mercaptan removal units as specified in Annex C.

The manufacturer/supplier shall give full details of the proposed catalyst including chemical base and its characteristics as mentioned in Annex B.

Note: Annexes D and E show typical questionnaires for mercaptan oxidation catalyst evaluation.

5. QUALIFICATION PROCEDURE

The manufacturer/supplier shall pass following steps respectively as well as all requirements of this standard specification:

5.1 Technical Approved (Step 1)

The manufacturer/supplier of catalyst shall provide information including original technical catalogue, MSDS and manufacturing product data sheet. The technical division shall evaluate information. Technical division shall approve the catalyst.

5.2 Laboratory Approved (Step 2)

The manufacturer/supplier that approved by technical division shall provide sufficient sample for laboratory tests. The laboratory tests will consist of laboratory tests, which are performed in local laboratory and/or accredited laboratory. The catalyst shall be passed these tests.

Note: Laboratory tests are given in Table A-1 of Annex A .This table provides typical properties for catalysts that have been used in natural gas refineries and presents guidelines for establishing minimum requirements for entering to step three.

5.3 Field Test Approved (Step 3)

The manufacturer/supplier that passed laboratory tests shall provide sufficient amount of catalyst for a 180 days period of operational test. The catalyst shall be passed operational test.

6. REQUIREMENT

All manufacturers/suppliers who evaluated and approved by sec. 5 of this standard and finally accepted in vendor list of oil ministry, shall meet the specification of Table A-1 in ANNEX A to participate in the tender.

7. QUALITY ASSURANCE

The manufacturer/supplier shall set up and maintain a quality assurance system for product supplied. The purchaser shall have the right to undertake inspection and testing of the products to ensure compliance with requirements of this standard specification.

8. APPLICABILITY

The catalyst shall be easily applicable when used for loading into the system without any impractical effort.

9. SAMPLES

9.1 Laboratory Test Sample

Laboratory test sample shall consist of sufficient amount of catalyst that shall be forwarded to the purchaser for laboratory tests. Samples shall be plainly identified by attached durable tag marked with at least the following information:

- Manufacturer's/Supplier's Name
- Batch Number
- Client/Purchaser's Name and addresses
- Standard specification: IGS-M-CH-052(0)
- Brand Name
- Description