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National Iranian Gas Co.

مدیریت پژوهش و فناوری

Research and Technology Management

امور تدوین استانداردها

Standardization Division

IGS

Iranian Gas Standards

Specification for :

مشخصات فنی :

SOLID SODIUM HYDROXIDE (Anhydrous Caustic Soda)

کاستیک سودا

APPROVED

## پیشگفتار

- ۱- این استاندارد/دستورالعمل بمنظور استفاده اختصاصی در شرکت ملی گاز ایران و شرکتهای فرعی وابسته تهیه شده است.
- ۲- شرکت ملی گاز ایران در مورد نیازهای عمومی از استانداردهای وزارت نفت (IPS) و در مورد نیازهای اختصاصی از استانداردهای اختصاصی خود (IGS) استفاده می نماید.
- ۳- استانداردهای شرکت ملی گاز ایران (IGS) توسط کمیته های تخصصی استاندارد متشکل از کارشناسان بخش های مختلف و یا مشاور تهیه می شود و توسط شورای استاندارد (منتخب هیئت مدیره شرکت ملی گاز ایران) به تصویب میرسند.
- ۴- در تنظیم متن استانداردهای (IGS) از کلیه منابع شناخته شده استاندارد، اطلاعات فنی - تخصصی مربوط به صنایع گاز دنیا، مشخصات فنی تولیدات سازندگان معتبر جهانی و نیز از نتیجه تحقیقات و تجربیات کارشناسان و متخصصان داخلی بر حسب مورد استفاده می شود. همچنین بمنظور استفاده هر چه بیشتر از تولیدات داخلی قابلیت های سازندگان داخلی نیز مورد توجه قرار میگیرد.
- ۵- استانداردها از طریق پایگاه اینترنتی شرکت\* و یالوح فشرده (CD) در اختیار واحدها و کاربران قرار می گیرد .
- ۶- استانداردها بطور متوسط هر ۵ سال یکبار و یادر صورت ضرورت زودتر، مورد بازنگری و بروزرسانی قرار میگیرند. بنابراین کاربران باید همیشه آخرین نگارش را مورد استفاده قرار دهند.
- ۷- هرگونه نظر و یا پیشنهاد اصلاح در مورد استانداردها مورد استقبال و بررسی قرار خواهد گرفت و در صورت تأیید، استاندارد مربوطه نیز مورد تجدیدنظر قرار خواهد گرفت .

## تعاریف عمومی

در متن استانداردهای (IGS) از تعاریف و اصطلاحات زیر استفاده میشود.

- ۱- "شرکت" (COMPANY): منظور از شرکت "شرکت ملی گاز ایران" و یا شرکتهای فرعی وابسته میباشد.
- ۲- "فروشنده" (SUPPLIER/VENDOR): به فرد یا موسسه ای اطلاق میگردد که تعهدی رانسبت به شرکت تقبل نموده است.
- ۳- "خریدار" (PURCHASER): منظور از خریدار "شرکت ملی گاز ایران" و یا شرکتهای فرعی وابسته میباشد.
- ۴- "SHALL": در مواردی بکاربرده میشود که انجام خواسته مورد نظر اجباری است
- ۵- "SHOULD": در مواردی بکاربرده میشود که انجام خواسته مورد نظر ترجیحی و درعین حال اختیاری است
- ۶- "MAY": در مواردی بکاربرده میشود که انجام کار به شکل مورد بحث نیز قابل قبول میباشد

## **FOREWORD**

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

Iranian Gas Standards (**IGS**) are prepared , reviewed and ammended by technical standard committees within NIGC Standardization Div. 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 div.

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 the 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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Website : <http://igs.nigc.ir>

E-mail : [nigcigs@nigc.org](mailto:nigcigs@nigc.org)

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**National Iranian Gas Co.**

**امور پژوهش و استانداردهای صنعتی**

**IGS**

**Iranian Gas Standards**

Specification for :

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**1. SCOPE**

This standard gives the procedure for purchasing sodium hydroxide (caustic soda) for use in the treatment of drinking and industrial water.

**2. REFERENCES**

Throughout this standard the following standards are referred to. The editions of these standards that are in effect at the time of issues of this standard (year 2002) shall , to the extent specified herein , form part of this standard . The applicability of changes in standards that occur after the date of this standard shall be mutually agreed upon by the purchaser and the supplier.

ASTM (American Society for Testing and Materials)

D 501-85 “ Methods of Sampling and Chemical Analysis of Alkaline Detergents “

E 291-90 “ Test Methods for Chemical Analysis of Caustic Soda and Caustic Potash (Sodium Hydroxide and Potassium Hydroxide)”

AWWA (American Water Works Association)

B 501-98 “ SODIUM HYDROXIDE (CAUSTIC SODA)”

ISIRI (Institute of Standards and Industrial Research of Iran)

No. 1053 “Specification for Physical and Chemical Requirement of Drinking Water”

### 3. DEFINITIONS

- 3.1 Approval test sample:** Approval test sample is the sample submitted to the purchaser for approval .
- 3.2 Approval tests:** Approval tests are the laboratory tests performed on the approval test sample by the purchaser.
- 3.3 Approved Products:** Approved products are those products whose approval test samples have been laboratory tested , passed the approval tests and listed or approved for being listed as approved products .
- 3.4 Approved suppliers:** The suppliers with the approved products will be known as approved suppliers.
- 3.5 Qualified products :** Qualified products mean the approved products proposed with respect to this standard which meet all requirements of this standard .
- 3.6 Qualified supplier(s) :** The supplier with the qualified products will be known as qualified supplier(s).

### 4. REQUIREMENTS

#### 4.1 Qualification

The suppliers and their products shall meet the following qualification.

##### 4.1.1 Approved products

See 3.3.

##### 4.1.2 Approved suppliers

See 3.4.

#### 4.1.3 Qualified products

See 3.5.

#### 4.1.4 Qualified supplier(s)

See 3.6.

### 4.2 Form of Supply

Form of anhydrous sodium hydroxide (flake, powder, beaded or other forms) shall be specified by the purchaser.

### 4.3 Chemical Requirements

Anhydrous sodium hydroxide shall conform to the following requirements when tested in accordance with the specified test methods.

Characteristic	Unit	Value	Test Method
Sodium hydroxide (NaOH), min	%wt	96	ASTM D 501 or AWWA B501 , Sec. 5.4
Total alkalinity as Na <sub>2</sub> O , min	%wt	74.4	ASTM D 501 or ASTM E 291 or AWWA B501 , Sec. 5.3
Carbonate as Na <sub>2</sub> CO <sub>3</sub> , max	%wt	2	ASTM D 501 or ASTM E 291 or AWWA B501 , Sec. 5.5

### 4.4 Impurities

Impurities in anhydrous sodium hydroxide shall not exceed the limits, when contacted with water , to affect adversely the physical and chemical requirements of drinking water in accordance with ISIRI No. 1053 .

Permitted impurities certificate shall be issued by an accredited institution acceptable to ISIRI.

#### **4.5 Sampling**

The sodium hydroxide shall be sampled in accordance with ASTM D 501 or AWWA B501 sec 5.1 .

#### **4.6 Formulation Changes**

The presented material(s) for supply shall be accepted only for the formulation for which approval tests have been made. Any change(s) in formulation , which may cause the material to be designated as a new material will not be accepted. The supplier may submit the modified material for acceptance under this standard using a new supplier's designation.

#### **4.7 Approval Tests**

The approval tests (see 3.2) of the sodium hydroxide will consist of the tests of this standard (see 4.3 and 4.4) .

##### **4.7.1 Approval test sample**

Approval test sample shall be sufficient in amount of the material proposed and furnished under this standard. The sample shall be forwarded to the purchaser while plainly identified by securely attached durable tags or labels marked with following information :

Sample for Qualification Test (or approval test)

Brand Name

Manufacturer's Name and Address

Material Designation (product ref/code)

Date of Production

The supplier shall also provide the operational information together with each sample as follows:

Description and Function(s)  
Instruction for Use  
Handling  
Storaging  
Shelflife  
Others

#### **4.8 Quality Assurance**

The supplier shall provide a quality assurance certificate to ensure that the sodium hydroxide proposed complies with this standard.

### **5. INSPECTION**

The supplier shall be responsible for carrying out all the tests and QA's required by this standard (see 4.3 and 4.4) , using his own or other reliable facilities and shall maintain complete records of all such tests and qualifications. Such records shall be available for review by the purchaser. The supplier shall furnish to the purchaser a certificate of quality stating that

each lot has been sampled , tested , and qualified in accordance with this standard and has been found to meet the requirements specified.

An inspection lot shall consist of a batch (or batches) of production processed from the same material components , and offered for inspection at one time .

The supplier shall afford the purchaser's inspector all reasonable facilities required for inspection of each batch of production in accordance with this standard. Such inspection in no way relieves the supplier of his responsibilities under the term of this standard.

The purchaser reserves the right to perform any inspections set forth in this standard where such inspections are deemed necessary to assure that supplies and services conform to the prescribed requirements.



The purchaser's inspector reserve the right to have access to the materials subject to inspection for the purpose of witnessing selection of the samples, preparation of the test samples and performance of the test(s) . For such tests , the inspector reserves the right to indicate the sample(s) from which the quantities will be taken in accordance with the provisions of this standard.

## **6. PACKAGING**

The sodium hydroxide shall be suitably packaged in 25 kg polyethylene -bags and protected against all damages or defects which may occur during handling and seaworthy shipment.

## **7. MARKING**

Each bag shall be permanently and legibly marked at least with following information:

Brand Name

Manufacturer's Name and Address

Purchaser's Name and Address

Order No.

NIGC Standard Code: (IGS-MS-CH-039(0):2002)

Handling Guidelines

Storaging

Date of Manufacture

Batch No.

## **8. INSTRUCTION FOR USE**

Supplier shall provide complete sets of instruction for use in a plastic bag inside each containing bag .

## FOREWORD

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**GENERAL DEFINITIONS:**

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

- 1- “ **RESEARCH & 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 the mentioned division.
- 2- **COMPANY “** : Refers to National Iranian Gas Company.
- 3- “ **PURCHASER”** : Means the “ company “ where this standard is part of direct purchase order by the “ company “ , and , the “ contractor “ where this standard is a part of contract documents , part of the procuremental set up organized to deal with end using of the comodities of services specified in IGS.
- 4- “ **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.

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