

هيئة التقييس لدول مجلس التعاون لدول الخليج العربية
STANDARDIZATION ORGANIZATION FOR G.C.C (GSO)

مشروع: أولي

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المنظفات – مادة التنظيف الجاف للملابس و المنسوجات
"بيركلوروايثيلين"
DETERGENTS- DRY CLEANING FOR CLOTHES
AND TEXTILES "PERCHLOROETHYLENE"

إعداد
اللجنة الفنية الخليجية لقطاع الكيمياء و الغزل والنسيج

هذه الوثيقة مشروع لمواصفة قياسية خليجية تم توزيعها لإبداء الرأي والملاحظات بشأنها ، لذلك فإنها عرضة للتغير والتبديل ، ولا يجوز الرجوع إليها كمواصفة قياسية خليجية إلا بعد اعتمادها من مجلس إدارة الهيئة.

ICS: 71.100.40

**DETERGENTS- DRY CLEANING FOR CLOTHES
AND TEXTILES "PERCHLOROETHYLENE"**

**Date of GSO Board of Directors' Approval :
Issuing Status : Technical Regulation**

تقديم

هيئة التقييس لدول مجلس التعاون لدول الخليج العربية هيئة إقليمية تضم في عضويتها الأجهزة الوطنية للمواصفات والمقاييس في دول الخليج العربية ، ومن مهام الهيئة إعداد المواصفات القياسية الخليجية بواسطة لجان فنية متخصصة .

وقد قامت هيئة التقييس لدول مجلس التعاون لدول الخليج العربية ضمن برنامج عمل اللجنة الفنية رقم TC 1 "اللجنة الفنية الخليجية لقطاع مواصفات الكيمياء و الغزل و النسيج " بإعداد المواصفة القياسية الخليجية رقم 2011/..... " المنظفات- مادة التنظيف الجاف للملابس و المنسوجات (بيركلوروايثيلين)". وقامت (دولة الإمارات العربية المتحدة) بإعداد مشروع هذه المواصفة.

وقد اعتمدت هذه المواصفة كلائحة فنية خليجية وذلك في اجتماع مجلس إدارة الهيئة رقم () ، الذي عقد بتاريخ / / هـ ، الموافق / / م .

Foreword

GCC Standardization Organization (GSO) is a regional Organization which consists of the National Standards Bodies of GCC member States. One of GSO main functions is to issue Gulf Standards /Technical regulations through specialized technical committees (TCs).

GSO through the technical program of committee TC No. 1 "Gulf TC of Chemical and Textile" has prepared the Gulf Standard No. :..... /2011 "*Detergents-Dry Cleaning for Clothes and Textiles (Perchloroethylene)*". The Draft Standard has been prepared by (United Arab Emirates).

This standard has been approved as a Gulf Technical Regulation by GSO Board of Directors in its meeting No.() ,held on / / H , / / G.

DETERGENTS- DRY CLEANING FOR CLOTHES AND TEXTILES "PERCHLOROETHYLENE"

1. SCOPE AND FIELD OF APPLICATION

This Gulf standard covers the requirements and specifications which must be met in perchloroethylene (Tetraethylene Chloride) used in dry cleaning for clothes and textiles and the testing methods.

2. COMPLEMENTARY REFERENCES

2.1 Gulf Standard GSO 2059:2010 "Synthetic liquid detergents for Clothing and fabrics".

2.2 Gulf Standard GSO 2060:2010 "Synthetic liquid detergents for clothing and fabrics – Test methods".

2.3 Gulf Standard GSO 151:2007 "Synthetic Detergents – Detergents Powder".

2.4 Gulf Standard GSO 152:2007 "synthetic detergents-methods of testing synthetic powdered detergents for household use".

2.5 Gulf Standard GSO ISO 607:1994 "Surface active agents and detergents -methods of sample division".

2.6 Gulf Standard GSO 1810:2007 "labeling for chemical products".

3. DEFINITIONS

For the purpose of this Standard the following terms and definitions shall have the meaning hereby assigned to them:

3.1 Perchloroethylene or Tetrachloroethylene (Tetraethylene Chloride): It is a clear transparent organic solvent, free of colloidal materials, extracted from petrol and its chemical formula $C_2 Cl_4$.

3.2 Dry Cleaning Material: It's a cleaning method without using water, in which number of solvents is used and more famous one is perchloroethylene.

4. REQUIREMENTS

Dry cleaning material for clothes and textiles shall comply with the following requirements:

4.1 It should be in the form of liquid.

4.2 It should be colorless.

- 4.3 It should have its unique original odour.
- 4.4 It shall not be affecting clothes and textiles colors.
- 4.5 It shall not be leaving undesired remains on hands when used.
- 4.6 Its molecular weight should be 165.83 g.
- 4.7 Its steam relative density should be 5.76 g/cm³.
- 4.8 Its steam pressure should not be less than 13 mm mercury at 20° temperature.
- 4.9 Its freezing point should be 22°.
- 4.10 Its boiling point should be 121°.
- 4.11 Its refraction index should be 1.505.
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- 4.12 Its log partition coefficient (octanol / water) should be = 3.40.
- 4.13 Its relative density should be between 1.618 – 1.623 g/cm³.
- 4.14 Its evaporation percentage should not be less than 95 % from total volume at 120-122° Temperature.
- 4.15 Its dissolving percentage in water should be 0.015 % by weight at 25° temperature.
- 4.16 It should be free from free chlorine.
- 4.17 It should be having neutral or alkaline effect for bromophenol blue indicator and Alkalinity should not be more than 0.002 % by weight in the form of sodium carbonate.

5. SAMPLING

5.1 It has to be taking into consideration that sampling of dry cleaning material for clothes and Textiles should be complied with gulf standard mentioned in section (2.5), in which Withdrawn sample for testing shall be not less than 3 units, each unit not less than 100 ml as following:

First sample: send to the laboratory.

Second sample: kept with party that withdrew the sample.

Third sample: kept with withdrawn party

6. TEST METHODS

The following testing methods shall be carried out on samples of dry cleaning material for Clothes and textiles:

6.1 Determination of free chlorine test:

6.1.1 Instruments: Graduated cylinder with 50 ml capacity

6.1.2 Used Solutions:

- Redistilled water
- 3.3 Dimethyl-Naphthidine indicator (0.05 g/L concentration)
- Acetic Acid

6.1.3 Method:

1. Dissolve 0.01 g from pure indicator in 5 ml from 100 % Acetic acid, dilute immediately to 200 ml.
2. Keep the solution in dark place.
3. Set 50 ml of tested sample in the graduated cylinder.
4. Add 5 ml from indicator, shake well for 30 seconds.

In case of appearing pink color, it's an evidence for existing free chlorine.

6.2 Determination of alkalinity percentage test:

6.2.1 Instruments: Beaker with cover 250 ml capacity

6.2.2 Used Solutions:

- Sodium Hydroxide NaOH 0.1 N
- Hydrochloric Acid HCl 0.1 N
- Bromophenol Blue Indicator (dissolved 0.2 g of bromophenol blue in 3 ml sodium hydroxide 0.1 N, completed to 100 ml volume by ethanol 95%).
- Neutral distilled water:
- 100 ml of previous distilled water in beaker then cooled
- Add 1 ml of bromophenol blue indicator, neutralized by acid or alkali 0.1 N until red color appears.

6.2.3 Method:

1. Transfer 50 ml of neutral water in a beaker.
2. Add approximately 100 g from sample material with 4:3 drops bromophenol blue indicator and neutralization carried with HCl with stirring after each drop until neutralization color appears.

6.2.4 Calculation:

Acid volume calculated (V) as following:

$$V \times 0.53$$

$$\% \text{ Alkalinity (in form of Sodium Carbonate) by weight} = \frac{\text{—————}}{W}$$

Whereas:

V: volume of HCl 0.1 N (ml) taken from burette

W: Sample weight in grams.

7. PACKAGING, PACKING AND STORAGE

The following shall be taken into consideration at the time of packaging packing and storing

Dry cleaning material for clothes and textiles:

7.1 Product shall be packaged inside appropriately close covers in order to protect the the Main ingredients and properties.

7.2 Product shall be packed inside appropriate containers as to ensure protection for them From external influences, loss or damage during multiple shipments, transportation, Handling and storage.

7.3 The containers shall be clean tightly closed.

7.4 The containers shall not affect or be affected by the product.

7.5 The product shall be stored in adequate conditions away from light and heat to ensure it r Remains safe.

8. LABELLING

The following information shall be stated clearly and legibly in Arabic or in both Arabic And English on dry cleaning material for clothes and textiles containers and on the label as Follows;

8.1 Name of the product and its chemical formul "symbol ".

8.2 Name of manufacturer, the address and/or his trademark.

8.3 Name of importer and the address in case of importing.

8.4 Date of production and Batch number.

8.5 Country of origin and if the product is manufactured under a registered trademark.

8.6 Net weight (g) or volume (L).

8.7 Purpose of use.

8.8 Directions and instructions for method of use and storage conditions.

8.9 Shelf- life and validity.

8.10 Precautions and warnings should be taken into consideration when use (if found).

9. RULES FOR ACCEPTANCE AND REJECTION

9.1 Each consignment of dry cleaning material for clothes and textiles containers must be accompanied with a certificate issued either from National Standardization Body (NSB) or from any other official body approved by NSB showing that the consignment is complying with this gulf standard.

9.2 The consignment is considered complying if it the samples (Final sample representing The consignment) have passed all the required tests analysis as stated in this Standard.

9.3 In case one or more samples failed any of the tests, a second sample twice the size of the First sample shall be withdrawn from the same consignment and be subjected to all the Required tests. Other than that, the consignment shall be considered not complying with This standard.