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**SANS 5618:2015**

Edition 4

# **SOUTH AFRICAN NATIONAL STANDARD**

## **Leather — Matter extractable by petroleum ether**

**WARNING**

**This document references other documents normatively.**

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Published by SABS Standards Division  
1 Dr Lategan Road Groenkloof ☒ Private Bag X191 Pretoria 0001  
Tel: +27 12 428 7911 Fax: +27 12 344 1568

[www.sabs.co.za](http://www.sabs.co.za)

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**Table of changes**

<b>Change No.</b>	<b>Date</b>	<b>Scope</b>

**Foreword**

This South African standard was approved by National Committee SABS SC 120B, *Leather – Leather test methods*, in accordance with procedures of the SABS Standards Division, in compliance with annex 3 of the WTO/TBT agreement.

This document was approved for publication in March 2015.

This document supersedes SABS SM 618:2001 (edition 3).

## **Leather — Matter extractable by petroleum ether**

### **1 Scope**

This standard specifies a method for the determination of matter extractable from leather by petroleum ether.

### **2 Normative references**

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies. Information on currently valid national and international standards can be obtained from the SABS Standards Division.

SANS 4684, *Leather – Chemical tests – Determination of volatile matter.*

SANS 5615, *Method for the sampling of footwear components and materials other than leather.*

SANS 5616, *Preparation of samples (leather, elastomeric material and other footwear materials).*

### **3 Principle**

Soluble matter is continuously extracted with petroleum ether from a prepared leather sample taken in accordance with SANS 5615. After reduction of the solvent, the extract is dried at  $95\text{ °C} \pm 5\text{ °C}$  and weighed.

### **4 Reagents**

For this analysis, use only reagents of recognised analytical grade.

**4.1 Petroleum ether**, boiling range  $60\text{ °C}$  to  $80\text{ °C}$ .

**Warning — Petroleum ether is highly flammable, has toxic properties and should be used with caution.**

**4.2 Acetone.**

### **5 Apparatus**

**5.1 Soxhlet extraction apparatus**, including and extraction flask of suitable capacity, a suitable heating mantle and a condenser.

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**5.2 Filter paper**, (Whatman No. 11, medium fast).

**5.3 Drying oven**, capable of being maintained at  $95\text{ °C} \pm 5\text{ °C}$ .

**5.4 Steam bath**, capable of boiling water.

**5.5 Desiccator**, large enough to take the extraction flask (see 5.1).

## 6 Procedure

**6.1** Prepare the leather samples as specified in SANS 5616.

**6.2** Clean the extraction flask and dry it by heating at  $95\text{ °C} \pm 5\text{ °C}$  for at least 30 min. Place three clean, dry glass beads in the flask, to prevent bumping during boiling. Allow to cool in the desiccator and determine the mass of the flask with the beads to within  $\pm 0,001\text{ g}$ .

**6.3** Weigh  $10\text{ g} \pm 1\text{ g}$  of the final sample and record the mass to the nearest 0,001 g. Place the sample (in a folded filter paper cup) in the extraction apparatus and close.

**6.4** Begin the continuous extraction with the petroleum ether. Once the extraction is complete, reduce the solvent from the residue on a steam bath.

NOTE Boiling (at a rate that causes siphoning every 10 min) for a period of 5 h will usually extract all the extractable matter, but in doubtful cases carry out a further extraction of the specimen, using a clean flask and fresh petroleum ether.

Add  $\pm 5\text{ mL}$  of acetone to the residue and swirl the flask to facilitate mixing. Place the flask on the steam bath until it is solvent free. Dry the residue in the flask for at least 3 h in the drying oven maintained at  $95\text{ °C} \pm 5\text{ °C}$ . Allow the flask and residue to cool in the dessicator. Determine and record, to the nearest  $\pm 0,001\text{ g}$ , the mass of both flask and residue.

## 7 Results

Calculate the extractable matter content ( $X$ ) as follows:

$$X = \frac{b}{a} \times 100$$

where

$X$  is the extractable matter content, as percentage;  
 $b$  is the mass of the residue in the flask, in grams; and  
 $a$  is the mass of the test sample, in grams.

NOTE To express the result on a 14 % leather moisture basis, multiply this value for the extractable matter by the factor  $\frac{86}{100 - c}$ , where  $c$  is the actual percentage moisture content, determined as in SANS 4684.

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