

Testing of insulating oils
Detection of corrosive sulfur
 Silver strip test

DIN
51 353

Prüfung von Isolierölen; Prüfung auf korrosiven Schwefel;
 Silberstreifenprüfung

Supersedes September 1977 edition.

In keeping with current practice in standards published by the International Organization for Standardization (ISO), a comma has been used throughout as the decimal marker.

1 Field of application

This standard applies to insulating oils as specified in DIN VDE 0370 Part 1 and DIN VDE 0370 Part 2.

2 Scope

This standard specifies a method of detecting such amounts of corrosive sulfur as would interfere in the operation of electrical apparatus.

3 Concept

For the purpose of this standard, sulfur and sulfur compounds are classified as corrosive if, under the conditions of this test method, they cause visible discolouration of a silver strip by forming silver sulfide as specified in subclause 11.2.

4 Principle

A silver strip is kept in the insulating oil for 18 hours at 100 °C and is then inspected for discolouration of the surface.

5 Designation

Designation of the silver strip method of determining corrosive sulfur in insulating oils (S):

Test DIN 51 353 – S

6 Apparatus

The following apparatus shall be used:

heating cabinet as specified in DIN 50011 Part 1, capable of being maintained at (100 ± 2) °C;

100 ml conical flasks fitted with DIN 12 242 – KNS 29/32 ground joint glass stoppers, e.g. DIN 12 387 – E 100 ANS 29 flasks, made of chemically resistant glass, e.g. DIN 12 111 glass, hydrolytic class 3.

7 Reagents and apparatus

The following reagents and apparatus shall be used:

chromosulfuric acid, prepared by dissolving 50 g of $K_2Cr_2O_7$ in 1 l of not less than 96 % (m/m) sulfuric acid, H_2SO_4 , $\rho = 1,84$ g/ml. The solution shall be kept stoppered in reagent bottles fitted with ground joint glass stoppers;

sulfur-free acetone (2-propanone);

sheet silver ¹⁾ with w (Ag) of 99,99 % by mass, 0,5 mm thick, hard-rolled blank, free from blemishes.

¹⁾ Information on sources of supply can be obtained from: *DIN-Bezugsquellen für normgerechte Erzeugnisse im DIN*, Burggrafenstraße 6, D-1000 Berlin 30.

Continued on pages 2 and 3