



## **CLA 5: Preventing Bitumen Surface Skin**

ASTM D92 Appendix X1 describes a technique to prevent the surface skin formation when testing the flash point of asphalts with an open cup flash point tester like CLA 5.

### **Background Information**

Asphalt and bitumen tend to form a surface skin when heated up.

When a surface skin is present, the flash point detection will fail, because the flammable vapors cannot evaporate from the sample and therefore cannot be ignited by the test flame.

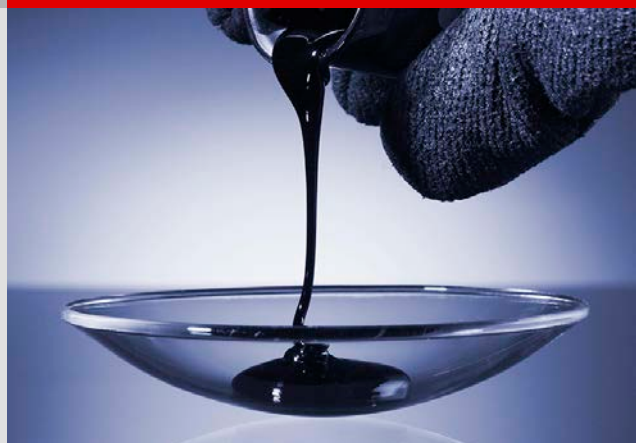


*Fig. 1 Cleveland flash point test with CLA 5*

### **Good to Know**

Safety features and functionalities a CLA 5 will offer:

- Flame extinguisher cover that will close after a flash or fire point has been detected
- Over heating protection with automatic shut-off during the test
- Check of cup presence
- Safety cut-off, when fire is detected
- Automatically lights test flame, relights if necessary



### **The Solution**

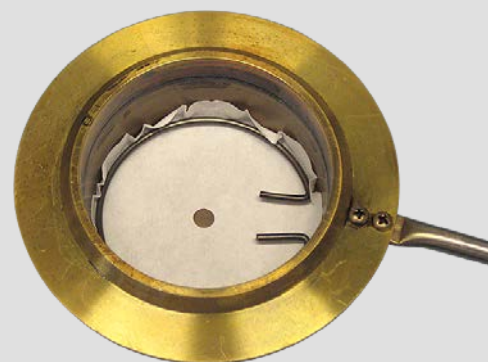
A technique to prevent surface skin formation when testing flash and fire points of asphalts was developed by Imran Hussami of Frontier El Dorado Refining Company and written down in Annex X1 of ASTM D92.

A filter paper with a 6 mm hole in the center is placed in the base of the Cleveland open cup flash point test cup, by curling up the sides with the skirt facing upwards.

A restraining tension ring is placed over the curved portion of the filter paper in the base of the cup before it is filled with the sample 4 to 5 mm below the filling mark.

(Filling to the filling mark could produce premature flash point results when the bitumen touches the indicator ring due to high volume expansion.)

Precision data is under evaluation at the moment.



*Fig. 2 Cup with filter paper and tension ring*

### **Do you have any questions?**

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