

**Idaho Standard Method of Test for****Detection of Anti-Stripping Additive in Asphalt**

Idaho IT-99-08



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**1 Scope**

- 1.1 This method covers field procedures for verifying the presence of anti-stripping additive in asphalt. This test is qualitative only and does not indicate percentage of anti-strip.

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**2 Summary and Significance of Method**

- 2.1 A small amount of asphalt is heated in a solution of Isopropyl Alcohol. The decanted alcohol is tested with an indicator of Bromophenol Blue. A visual color change indicates the presence of anti-stripping additive of organic compounds classified as amines. Use only clean containers and fresh chemical solutions, since water and other contaminants may cause a misleading color change.

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**3 Apparatus**

- 3.1 Stove or hotplate.
- 3.2 Glass beakers of approximately 1.7-oz. (50 ml) capacity or disposable aluminum cups of approximately 4-oz. (120 ml) capacity.
- 3.3 Glass stirring rods or new disposable wooden stirring sticks approximately 6 in. (150 mm) long.

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**4 Reagents**

- 4.1 Reagent Grade Isopropyl Alcohol (99.7% water free, minimum), a flammable solvent.

Do not store alcohol in any other bottles or cans – keep in the original container. Do not pour unused alcohol back into the original container.

- 4.2 Bromophenol Blue Indicator having a concentration of 0.2% in Isopropyl Alcohol (99.99% water free). The indicator, a flammable solution, should be a clear, orange color and not more than two (2) years old. The indicator and alcohol can be obtained from the Central Materials Laboratory.

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**5 Sample**

- 5.1 The test sample should be taken in accordance with the sampling methods described in [AASHTO T 40](#). However, a small, quick sample may be obtained by inserting a clean wooden lath into the load of asphalt, withdrawing the lath, and dripping the excess asphalt into a disposable aluminum cup.

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## 6 Procedure

Note: Keep any water source or steam away from the testing area because water will alter the test results.

- 6.1 Control Blank. **Add** 1.35 oz. (40 ml) of Reagent Isopropyl Alcohol to a 1.7-oz. (50 ml) glass beaker or a 4 oz. aluminum cup.
- 6.2 Test Sample. Place approximately 1 g of asphalt to be tested into another 1.7-oz. (50 ml) beaker or an aluminum cup and add 1.35 oz. (40 ml) of Reagent Isopropyl Alcohol (1 g is about the size of a quarter and can be placed in the container with a glass rod or a wooden stick).
- 6.3 Warm the control blank on a hotplate until small bubbles appear. Remove beaker from hot plate and add a drop of the Bromophenol Blue Indicator and stir. Continue adding drops (normally 3-5 drops) and stirring until the control blank has turned a definite yellow color. (Be extremely cautious around open flame, as the Isopropyl Alcohol is flammable). If the liquid in the control blank is any other color than yellow, contamination has occurred. If contamination is suspected, clean the testing equipment with the Reagent Isopropyl Alcohol prior to re-testing. If contamination continues to be suspected, obtain new alcohol and replace equipment if necessary prior to re-testing.
- 6.4 Warm the test sample until the liquid portion becomes approximately the same shade of yellow as the control blank. Pour the liquid portion of the mixture into a clean 1.7 oz. (50 ml) beaker or disposable aluminum cup. Immediately add the same number of drops of Bromophenol Blue Indicator as was added to the control blank and stir.

Stop heating before the mixture becomes too dark, since this will interfere with the color interpretation. After heating, remove the 1.7-oz. (50 ml) beakers a safe distance from the hotplate or flame.

- 6.5 The presence of an anti-stripping additive is verified when the test liquid turns blue. Any other color change, including light green color, is not a positive reading.

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## 7 Report

- 7.1 Report blue color as positive; report any other color change as negative.

### QUALIFICATION CHECKLIST

#### DETECTION OF ANTI-STRIP ADDITIVE IN ASPHALT – IDAHO IT 99

Record the symbols “P” for passing or “F” for failing on each step of the checklist.

Procedure Element	Trial 1	Trial 2
<b>General</b>		
1. All containers and or stir sticks were clean and chemical solutions were fresh.	1 _____	_____
<b>Detection test by Color Method only</b>		
2. A control blank was performed.	2 _____	_____
3. 40ml of Reagent Isopropyl Alcohol or equivalent was used.	3 _____	_____
4. The asphalt mixture was heated on a hot plate.	4 _____	_____
5. Heating of sample was stopped before mixture became too dark.	5 _____	_____
6. The same amount of Bromophenol Blue Indicator was added to both mixtures.	6 _____	_____
7. Test results were accurately interpreted and recorded on the proper ITD form. (Blue color as positive; report any other color change as negative).	7 _____	_____

Comments: First Attempt: Pass  Fail  Second Attempt: Pass  Fail

Testing Technician’s Name: \_\_\_\_\_ WAQTC # : \_\_\_\_\_ Date: \_\_\_\_\_

Examiner’s Name: \_\_\_\_\_ Signature \_\_\_\_\_