Work Plan for

NTPEP Evaluation of Asphalt Release Agents

NTPEP Designation: [ARA-19-01]
INTRODUCTION

The National Transportation Product Evaluation Program (NTPEP) was established to minimize the amount of duplicative testing of transportation materials performed by AASHTO member states by providing a process where manufacturers submit their products to NTPEP for laboratory and/or field testing. The results of the testing are then shared with member Departments for their use in product quality verification.

This practice provides the NTPEP member departments information on the asphalt release agents testing program. In keeping with the NTPEP philosophy of purely testing materials, no conclusions are provided with the test results. The evaluation of the test results is left up to each member department.

Texas is the Lead State and is responsible for the oversight of the testing program for the asphalt release agents.

1. SCOPE

1.1 This Work Plan covers the requirements and testing criteria for the National Transportation Product Evaluation Program (NTPEP) evaluation of asphalt release agents. NTPEP serves the member departments of the American Association of State Highway and Transportation Officials (AASHTO).

1.2 The results of this program may be used for product quality verification by individual member Departments. If used for quality verification, a letter of certification from the asphalt release agent manufacturer indicating testing was conducted by NTPEP that supports published values may be required by member Departments.

1.3 This Work Plan may involve hazardous materials, operations, and equipment. It does not purport to address all safety problems associated with its use. It is the responsibility of the user of this standard practice to establish the appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

1.4 The values given in parentheses (when provided) are not standard and may not be exact mathematical conversions. Use each system of units separately. Combining values from the two systems may result in nonconformance with the standard.

2. REFERENCED DOCUMENTS

2.1 AASHTO Standards:

- AASHTO T 383, Evaluation of Asphalt Release Agents (ARAs)
3. SUMMARY OF PRACTICE

Asphalt release agent manufacturers will be permitted to submit their products to be tested and evaluated on a quarterly basis (January, April, July and October). These products are evaluated and laboratory tested by a NTPEP contracted laboratory. Test result data is entered into the web-based NTPEP DataMine program. States use the test data for acceptance/rejection against their specifications.

4. SIGNIFICANCE AND USE

This practice is intended to only determine the properties of these materials. Acceptability of each material, based upon the data generated as a result of the testing and evaluation in this practice, is the responsibility of the user.

4.1 Asphalt Stripping Test – to evaluate the susceptibility of stripping of asphalt from aggregates in truck beds and on other paving equipment when using asphalt release agents.

4.2 Mixture Slide Test – to evaluate the susceptibility of a hot mix asphalt (HMA) mixture adhering to the beds of haul trucks or paving equipment when using asphalt release agents.

4.3 Asphalt Performance Test – to determine the susceptibility of hot asphalt binders adhering to plant and paving equipment, rakes, shovels, etc. when using asphalt release agents.

4.4 Product Formulation Reference Parameters (Fingerprint) - The infrared spectrum (FTIR), percent solids, specific gravity and pH are intended to be used as reference parameters to verify product formulations of future lab or field samples. The flash point is intended to determine product safety.

5. APPLICATION FOR PRODUCT TESTING

5.1 Submittal of Product Evaluation Form(s) and other information.

The manufacturer will submit an electronic Product Evaluation Form (ePEF) to the NTPEP Manager through DataMine (http://data.ntpep.org). For each product submitted, the manufacturer will be required to provide a Rank Order List, product literature, SDS information, Flash Point, Infrared Spectra, and pH test results, and payment. After review of the ePEF(s) for completeness and accuracy, the NTPEP Manager will work with the Lead State Coordinator to decide on the products to be tested. The decision will be based upon the number of total products submitted for testing by all the manufacturers and their Rank Order Lists. The NTPEP Manager will then advise the manufacturer within two weeks of receipt of the ePEF of the products approved for testing.

Note 1 – At times, it may be necessary to limit the number of submittals from each manufacturer for an evaluation period to maintain a manageable work load. Any decision by the Technical Committee to limit submittals for a cycle will be based on the testing capacity of the contracted laboratory(s).
5.2 Assignment of Test Number

A Test Number shall be assigned to each product approved for testing. The Test Number shall indicate the Asphalt Release Agent designation (ARA), the year of submission, the submission cycle, and a sequential sample number (ARA-Year-Cycle-Sample No.). For example: ARA-2010-02-004 would be assigned to an ARA submitted in 2010 for Cycle 2 and the 4th product submitted.

A new Test Number will be assigned to each product approved for resubmittal testing per the requirements of Section 13 below.

Note 2 – Asphalt Release Agent (ARA) numbers that are assigned to a Manufacturer’s product will not change for the life of the test (≤ 3 years). The Product Name that the manufacturer gives the product at the time of application will be allowed to change until the first data is issued to the manufacturer for review. Once this report is submitted to the manufacturer for review, no changes to the product name will be allowed.

Note 3 – Product Evaluation Form(s) Submittal Deadlines – Electronic Product Evaluation Forms (ePEF) shall be submitted electronically in DataMine by the deadline set forth by the NTPEP Manager in order for testing to commence in January, April, July, and October (Testing Cycle 1, 2, 3 and 4, respectively) of the year in which evaluation is to begin. The deadline will be on the closest normal business day a minimum of three weeks prior to commencing testing.

6. EVALUATION OF ASPHALT RELEASE AGENTS

6.1 The testing protocols for ARAs are briefly described in Section 10 and referenced to actual testing in AASHTO T 383. With the exception of the Flash Point, Infrared Spectra, and pH tests, all other tests will be performed and reported in triplicate to comply with repeatability requirements.

6.2 The evaluation laboratory(s) shall be selected by the Technical Committee and may be the Lead Testing state, a NTPEP member state's laboratory, and/or a private independent laboratory.

6.3 Field evaluation will not be conducted under this Work Plan. However, state DOT's may require and conduct field evaluations of materials at their discretion.

7. MANUFACTURER’S DOCUMENTATION

7.1 Upon submittal to NTPEP, the manufacturer shall supply certified documentation showing the brand name and designation; the composition or description of the asphalt release agent; recommended dilution ratio; the product formulation reference parameters (fingerprint); the Safety Data Sheet (SDS); and the manner in which the material will be identified on containers. Multiple dilution ratios may be submitted for different applications but limited to five (5) per product. Each dilution ratio will require a new product submission per Section 5.

For the FTIR and Flash Point test results, each one shall contain the:

- product name,
- date tested,
- testing company name and address,
- name of tester, and
- signature of tester.

Note 4 – Private Label Products – Private label products are products made by a source manufacturer then offered for sale under the Private Label company’s brand. These products must have a unique brand name not associated with the source manufacturer product name(s).
This Work Plan is intended to address asphalt release agents which protect worker safety and which have low or no environmental impact. The manufacturer shall submit documentation that ARAs acceptable for submission:

- Contain no components that exceed EPA acceptable limits and contain no polychlorinated biphenyls (PCBs),
- Have the following ratings for the Globally Harmonized System (GHS) Hazard Categories:

<table>
<thead>
<tr>
<th>Category</th>
<th>Nothing more hazardous than:</th>
<th>And cannot have any of the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammable Liquids</td>
<td>Category 4</td>
<td>• Pyrophoric</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Self-Heating</td>
</tr>
<tr>
<td>Reactivity</td>
<td>Non-reactive</td>
<td>• Self-reactive</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Reactivity with water</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Oxidizer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Organic Peroxide</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Corrosivity with water</td>
</tr>
<tr>
<td>Acute Toxicity</td>
<td>Category 5</td>
<td>• Germ Cell Mutagenicity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Carcinogenicity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Reproductive Toxicity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Target Organ System Toxicity (TOST)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• – single or repeated exposure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Aspiration Toxicity</td>
</tr>
<tr>
<td>Respiratory Sensitization</td>
<td>Not Classified as a Sensitizer</td>
<td></td>
</tr>
<tr>
<td>Skin Corrosion/Irritation</td>
<td>Category 3</td>
<td></td>
</tr>
<tr>
<td>Skin Sensitization</td>
<td>Not Classified as a Sensitizer</td>
<td></td>
</tr>
<tr>
<td>Eye Effects</td>
<td>Category 2B</td>
<td>• pH ≤ 2 or ≥ 12.5</td>
</tr>
</tbody>
</table>

- Do not contain flammable materials such as solvents or petroleum elements,
- Have no Flash Point below 400°F (204°C) on the undiluted product as measured by ASTM D 93. If no Flash Point is observed due to boiling of the material, apply Section 8.7 of D 93 to obtain the ingredients listed in the product SDS and run the test to record and report the Flash Point, and
- Comply with EPA regulations for pH levels (2-12.5).

The manufacturer shall indicate when this is a resubmittal, either due to a product change as described in Section 8.2 or due to the 3-year time requirement described in Section 13.

The manufacturer shall certify that, unless NTPEP is notified as described in Section 8.1, material furnished under the submitted brand name and designation will be of the same composition and formulation as originally evaluated by NTPEP.
PRODUCT CHANGES

8.1 Product Changes

If the manufacturer changes the formulation, composition, or concentration, or alters the physical properties of a product previously evaluated by NTPEP, but maintains the same reported name, the manufacturer must notify NTPEP, regardless of whether or not they elect to re-submit the product for testing. The web-based test report will then be revised to note when a previously reported product has a new formulation which has not been evaluated by NTPEP.

Note 4 – It is recommended that users of the test data require a written certification from the manufacturer stating supplied product is identical to that most recently tested by NTPEP.

8.2 Product Changes (resubmitted)

Submitted products, previously evaluated by NTPEP and reported under the same name, but which have had formulation, composition, or concentration changes, or alterations to its physical properties, will be treated as though it were new and not previously evaluated.

SAMPLING

9.1 After receipt of the approved submittals, the Lead State will contact the manufacturer to request random sampling for each material or type to be tested. The sample may be taken from anywhere that is convenient (drums, totes or bulk), provided that it is a random sample that represents a production run of the material.

9.2 Each sample shall consist of 2 gallons (8 liters) of product in a container(s) identified by the manufacturer and shipped along with a Safety Data Sheet (SDS) to the testing laboratory following the instructions of the Lead State. The sample container shall be labeled. The sample container must show the manufacturer’s production labeling, product name, date of manufacture, and batch or lot number.

9.3 Each product must be submitted “Non-Diluted”. “Non-Diluted” is defined as the strongest concentration of the product available for sale and delivery to customers. Any dilution ratio submitted in the ePEF will be diluted from the submitted non-diluted concentration by the NTPEP Laboratory for testing of both concentrations as stated in T 383, Sections 5.3.5, 6.3.3, and 7.3.2.

LABORATORY TESTING

10.1 All equipment used for testing under this Work Plan and AASHTO Test Procedures T 383 shall be calibrated or verified according to applicable AASHTO standards. The Testing Laboratory will maintain a Quality Control Manual describing calibration and training procedures and schedules. The Laboratory shall insure that all applicable standards are available to its technicians and verify that the correct versions of those standards are being used. The Quality Control Manual and all records of training and calibration activities related to asphalt release agent testing for the NTPEP program shall be available for inspection by NTPEP.

DELIVERABLES - EVALUATION RESULTS AND DATA

11.1 Test result data will be compiled on populated test tables and made available to all participating states and testing companies through the AASHTO/NTPEP DataMine website. No judgment as to a product’s acceptability to any state will be made in DataMine. End state user participants will establish individual criteria for product acceptability. Product preparation/installation and post-evaluation images will also be uploaded to DataMine.
11.2 The populated test tables shall contain the test data generated by the contracted NTPEP laboratory(ies). The images uploaded will also be captured by the laboratory(ies’) representative.

11.3 Test results will be transmitted electronically in the web-based data base, DataMine, as follows. Once test tables and images are reported to the technical committee’s chair and liaison, they will release data and associated images to the manufacturer for review. When the manufacturer reviews and accepts the data, s/he can release the data to the public through DataMine.

11.4 DataMine – This database can be accessed through the AASHTO/NTPEP web site link at http://data.ntpep.org/.

11.5 Timeline for Asphalt Release Agent Evaluation and Reporting of Data

- The NTPEP laboratory shall conduct four cycles of testing per calendar year.
- Each submittal package shall be maintained on the NTPEP webpage. Deadlines for submittal of samples are as follows (actual date will be the closest normal business date):
  - Cycle 1 – January 1
  - Cycle 2 – April 1
  - Cycle 3 – July 1
  - Cycle 4 – October 1
- 60 calendar days after the Receipt date – completion of laboratory testing.
- 65 calendar days after the Receipt date – completion of test results review and submission to the Lead State.
- 75 calendar days after the Receipt date – completion of test results review and submission to the manufacturer.
- 100 calendar days after the Receipt date - results released in DataMine as Public or Private dependent upon the manufacturer’s decision.
- 6 months after the Receipt Date – manufacturer may appeal for retesting
- 20 business days after NTPEP Manager written notification – re-test completed and reported by the NTPEP laboratory.
- 3 years after the Report Date - product listing in DataMine shall be valid.

12. TEST REPORT REVIEW AND TEST RESULT APPEALS

The NTPEP laboratory will submit the DataMine data to the Lead State Coordinator and the NTPEP Manager within 5 calendar days after completion of all testing. The data will be forwarded by the Lead State Coordinator to the manufacturer within 10 calendar days. The manufacturer will receive a copy of the portion of the report dealing with their specific product(s). The manufacturer will review the data and determine if it should be made Public or Private. The manufacturer may appeal all or any portion(s) of the results in accordance with the AASHTO/NTPEP Appeals Procedures. An appeal must be submitted within 6 months from the Report Date posted by the NTPEP laboratory. Re-testing of the materials will be performed by the NTPEP laboratory that initially performed the tests and only on the relevant sample and parameter being questioned. No additional sample material will be received for re-testing. The NTPEP laboratory will provide results of the re-test within 20 business days after written notification by the NTPEP Manager stating which portion(s) need to be re-tested. Prior to re-test, the manufacturer making the appeal shall submit a fee to NTPEP to cover the costs of re-testing. Should the results of the re-test uphold the appeal, the fee shall be reimbursed to the submitting manufacturer. Upon agreement between the manufacturer appealing the test results and the NTPEP Manager, either the original set or re-test set of data shall be published.

13. RESUBMITTAL TESTING FREQUENCY

Resubmittal of a previously tested product must be accomplished once every three (3) years. If resubmittals have not been received by the end of the third year, then the product will be removed from DataMine.
The manufacturer may elect to resubmit products earlier than 3 years for full testing to fulfill member states' requirements to be maintained on their qualified products list (QPL).

**Note 5** - Some state DOTs require asphalt release agents to undergo resubmittal testing after a different specified time.

### 14. TESTING FEES

Testing fees are to be paid at time of application. Fees paid by the manufacturer will not be refunded once testing begins.

**Note 6** - A re-test fee for challenged results shall be paid by the manufacturer. This fee is refundable if re-testing upholds the challenge. Fee is to be paid only if the original test results are found to be accurate.

### 15. KEYWORDS

Asphalt release agents; *DataMine*; NTPEP