



## GREEN PURCHASING CASE STUDIES: SOY-BASED ASPHALT RELEASE AGENT HITS THE PAVEMENT

CITY OF PORTLAND, BUREAU OF PURCHASES  
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*The PDOT Maintenance Group uses a soy-based product to prevent asphalt from sticking to tools and equipment.*

### PURCHASING GREEN

Each year, the Portland Office of Transportation Maintenance Group hauls and applies thousands of tons of asphalt to complete street maintenance projects. Asphalt, a mixture of rock and tar, sticks to the beds of dump trucks and asphalt-spreading tools.

In the past, crews used diesel oil to prevent sticking and to clean asphalt and tar from truck beds and tools. In 1999 when the U.S. Environmental Protection Agency began to regulate the use of materials containing volatile organic compounds (VOCs), including diesel, the city tested less harmful alternatives. The PDOT Maintenance Group currently uses a bio-based asphalt release agent containing soy.

### BENEFITS

Because of its VOC content, diesel presents risks to human health and the environment. VOCs contribute to the formation of smog and can cause respiratory and other health conditions in workers. They can also contaminate soil and groundwater with hazardous chemicals such as benzene, toluene, and naphthalene.

Unlike diesel, bio-based asphalt release agents such as the soy-based product used by the PDOT Maintenance Group are typically nontoxic, containing little to no VOCs. Bio-based products are biodegradable, easy to clean up, and present virtually no threats to human health and wildlife. Additionally, bio-based products contain ingredients from renewable resources – such as soybeans – which reduce dependence on petroleum.

### AT A GLANCE

#### WHO

Portland Office of Transportation Maintenance Group

#### WHAT

Soy-based asphalt release agent

#### COST

💰 Half the cost of diesel per gallon of mixed product

#### BENEFITS

- ✓ Safer for human health, wildlife, and the environment
- ✓ Contains renewable materials
- ✓ Reduces dependence on oil

## **COST**

The bio-based asphalt release agent currently used by the PDOT Maintenance Group is a concentrated formula that can be diluted at various levels to serve different needs. For example, the PDOT Maintenance Group uses a 20:1 solution for releasing asphalt and a 5:1 solution for cleaning. Because of this ability to be diluted, the soy-based asphalt release agent costs up to 50 percent less than diesel per gallon of mixed product.

## **PERFORMANCE**

Maintenance personnel report that the soy-based asphalt release agent is very effective. The PDOT Maintenance Group continues to test new asphalt release agents to ensure they are using the best available products that maximize performance and minimize environmental impacts.

***“We’ve found that soy-based asphalt release agents are effective, easy-to-use, and cost-efficient. It makes sense for both us and the environment to use these products.”***

**Peter Schillaci**  
**Street Systems Program Supervisor,**  
**Portland Office of Transportation Maintenance Group**

## **LESSONS LEARNED**

One issue with diesel is that it softens asphalt and creates potholes if it comes into contact with pavement. At full strength, many bio-based asphalt release agents produce similar results. Although this problem is largely avoided by using products that can be diluted, mixtures can separate over time. If workers forget to shake the separated product before use, it is dispensed at full strength. One of the features the PDOT Maintenance Group likes about its present soy-based asphalt release agent is that it does not separate after being mixed, eliminating this problem altogether.

### **ABOUT THE PORTLAND OFFICE OF TRANSPORTATION MAINTENANCE GROUP**

The Portland Office of Transportation Maintenance Group inspects, cleans, maintains, and repairs all transportation and sewer-related infrastructure within the City of Portland. This infrastructure consists of paved streets, sewers, sidewalks, bridges, curbs, street corners, retaining walls, guardrails, stairways, traffic control devices, street lights, and parking spaces. This group also performs around-the-clock response to emergencies such as storms, floods, and other incidents that inhibit safe transportation.

### **FOR MORE INFORMATION**

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