



 **NOVA Chemicals**
Polyethylene

BONFIRE[®]

Film Development Platform

Bring better-designed, better-performing
multilayer film products to market faster

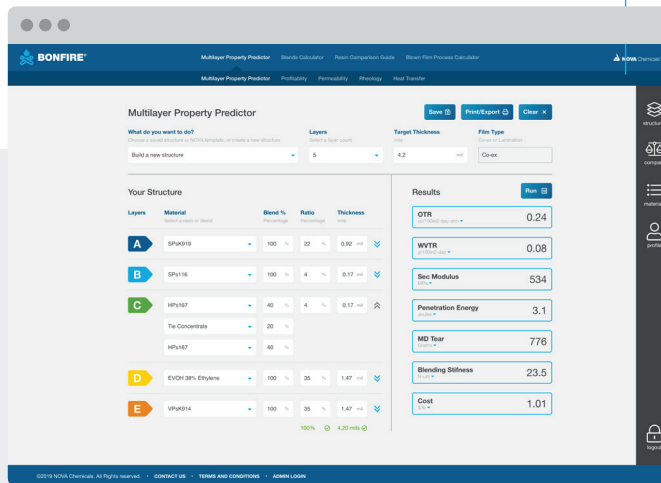
USING THE BONFIRE PLATFORM TOOLS



Multilayer Property Predictor

The multilayer property predictor (MPP) is the main module within the BONFIRE platform. Here, you build, modify, and compare multilayer film structures containing up to 11 layers, with up to three blend components per layer. If you choose to save structures for future reference, they are kept private and cannot be accessed or seen by anyone else.

First, login or register at novachemicals.com/Bonfire



1

Go to the **Multilayer Property Predictor** (MPP) and enter the number of layers and target thickness to begin building a new structure.

2

Enter the specific materials, blend ratios and layer ratios for your structure.

3

Click **Run** for a summary of predicted physical and barrier properties. Use the **Compare** feature to look at the properties of two films side by side.

4

Click **Save** to keep the structure for future use or **print a PDF** summary of the structure and predicted properties.

The **MPP** includes several tools to help you **explore** structure or layer characteristics in detail.

Profitability



The cost calculator accounts for production, utility, labor and other costs. Results predict total film cost and a profitability estimate.

Permeability



Use the permeability tool to predict oxygen and moisture barrier performance under different relative humidity conditions for films containing moisture sensitive resins such as EVOH or Nylon.

Rheology



Predict how the resins in your structure will flow in a multilayer film die under specific conditions and identify potential film performance deficiencies.

ALSO AVAILABLE:

Heat Transfer



Work with your NOVA Chemicals' Technical Service Specialist to learn how heating and cooling times can affect sealing and other converting processes.

About the **BONFIRE** Film Development Platform

A suite of tools for designing and improving complex multilayer films

Today's flexible packaging films must meet a variety of demanding performance, aesthetic, and cost requirements. Designing multilayer films that meet these complex specifications can be a significant challenge, often requiring extensive calculations and line time. Accelerate innovation with NOVA Chemicals' BONFIRE Film Development Platform. This robust set

of online tools enables our customers to predict the properties of different multilayer film structures, and helps speed time to market by reducing the number of physical trials needed to prove out a new structure. The platform contains an extensive resin database that includes NOVA Chemicals' commercial polyethylene grades, as well as other polymers commonly used in multilayer films.

The **BONFIRE** platform also includes tools to **enhance** your knowledge and help you create better multilayer film structures:



Blends Calculator

Explore the effects of resins and additives which are blended in a single layer.



Resin Comparison Guide

Compare resin properties to help you choose the best resins for your application.



Blown Film Process Calculator

Assess film performance and scalability within different run conditions and processing parameters.



BONFIRE Academy

Develop **expertise** in polyethylene and multilayer film topics including materials, processes, tests and more. Learn at your own pace – new content is added regularly!



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ACTUAL VERSUS PREDICTED PROPERTIES: The BONFIRE platform is intended to provide guidance on structures and materials used in coextruded packaging films. The actual properties of the films will be affected by many additional factors such as processing, additives, blending effects and or layer variability. Film manufacturers should consult and work with their NOVA Chemicals Technical Service Representative when using this tool.

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