NOVA Chemicals®

Polyethylene

US/Pittsburgh

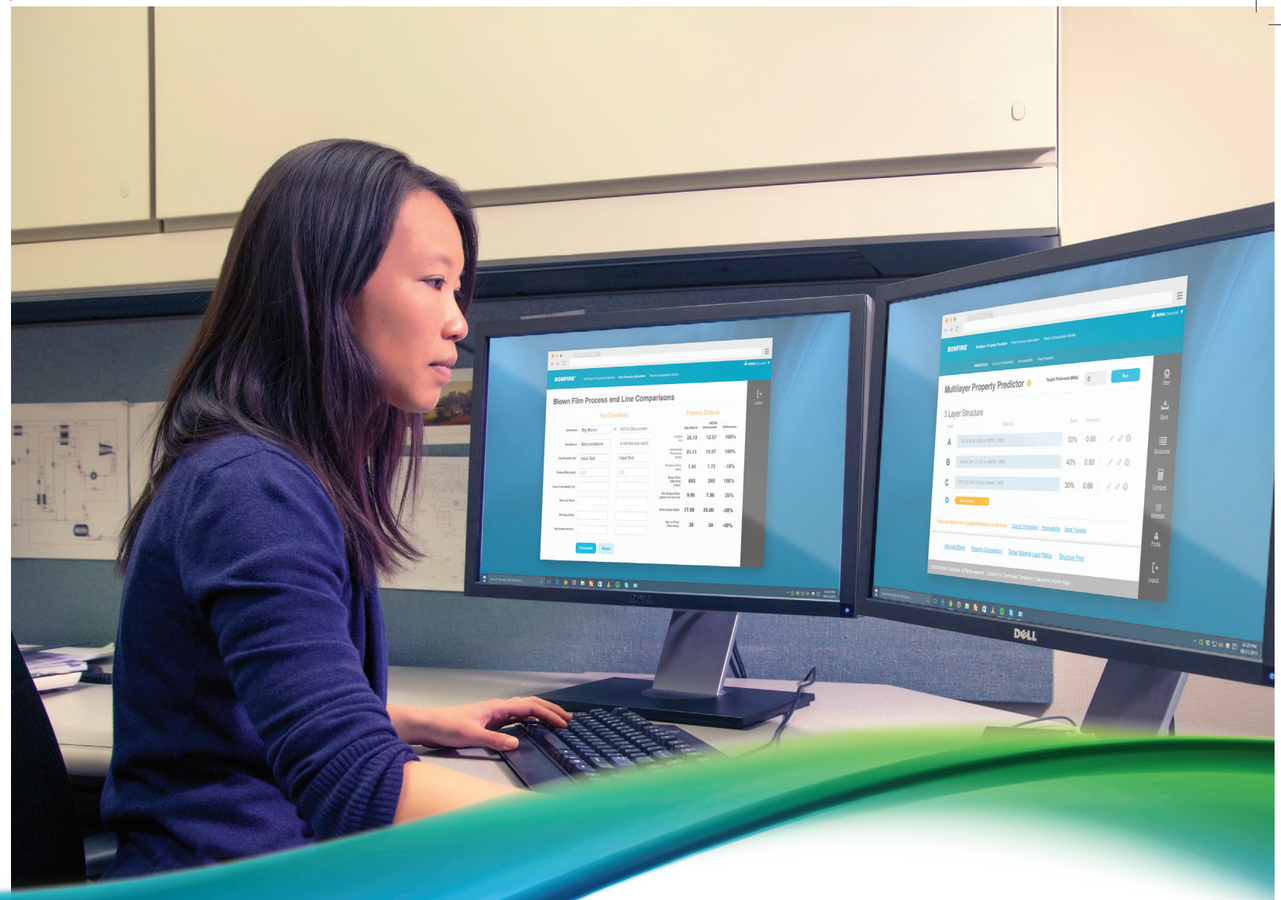
+1.412.490.4170

800.222.7213 x4170

markets@novachemicals.com

novachemicals.com

D18CT



NOVA Chemicals®

Polyethylene

BONFIRE℠

Film Modeling Platform

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

BONFIRE Film Modeling 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 specifications can be a significant challenge, often requiring extensive calculations. To help with this challenge, NOVA Chemicals has developed the BONFIRE film modeling 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. Just as important, the BONFIRE platform also accelerates innovation through virtual evaluation of new materials, structures and concepts.

Overview

The BONFIRE suite of tools includes the core Multilayer Property Predictor (MPP) along with several ancillary modules to help guide development of new or improved multilayer films. It was designed with a simple, intuitive interface for ease of use.

The BONFIRE platform contains an extensive resin database that includes NOVA Chemicals' commercial polyethylene grades, and many other resins used in multilayer films. We are continually enhancing the platform with new modules and more advanced calculations to make the job of multilayer film design easier and faster.

USING THE BONFIRE PLATFORM

1. Go to the Multilayer Property Predictor (MPP) main module first to build one or more structures
2. Click on the blue + symbol on the main screen and enter the specific materials, blend ratios, and layer ratios for your structure. Click "Save" to confirm materials in each layer."
3. Enter the target film thickness and click the "Run" link for a summary of predicted physical and barrier properties. Users can also compare properties for different films using the "Compare" feature.
4. To save the structure for future comparison or modification, click the "Save" link on the right side of the screen. Give the structure a distinct name and click the "Save Structure" link."
5. Once the structure is input correctly and/or saved, additional properties can be generated by opening the structure in one of the other BONFIRE platform modules.

Easy Access

Login or register at **novachemicals.com/Bonfire**

Print Summary

A convenient summary of all properties for the saved film can be obtained by clicking on the "Print Summary" Tab.

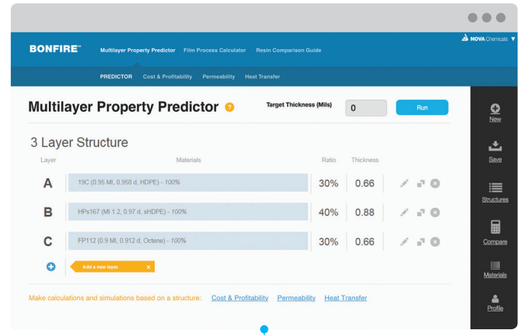
Save for Later

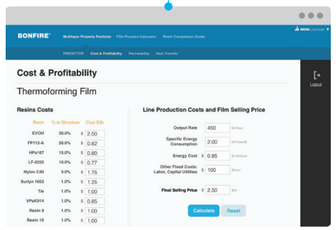
All of the saved resin prices and saved structures will be loaded to your personal profile and available during your future sessions.

BONFIRE PLATFORM MODULES

Multilayer Property Predictor

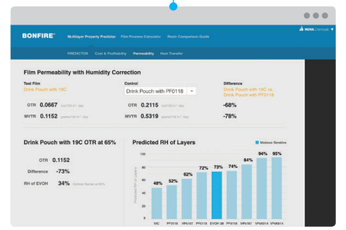
The multilayer property predictor (MPP) is the main module within the BONFIRE platform. Here, you build, modify, and compare multilayer film structures containing up to nine layers, with up to three blend components per layer. Users can save any of the film structures they build for future comparisons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





Cost and Profitability

The cost of a proposed film is a critical factor in multilayer film design. The comprehensive cost calculator accounts for production, utility, labor and other costs. Results predict total film cost and a profitability estimate.



Permeability

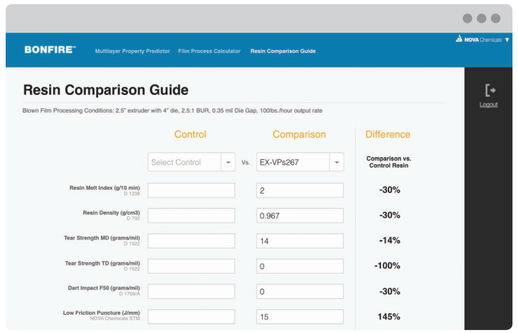
The oxygen barrier of films containing moisture sensitive resins such as EVOH or Nylon is affected by relative humidity and multilayer structure design. The barrier module provides a sophisticated performance prediction that accounts for the relative humidity effect on OTR in moisture-sensitive layers.

ALSO AVAILABLE:

Heat Transfer

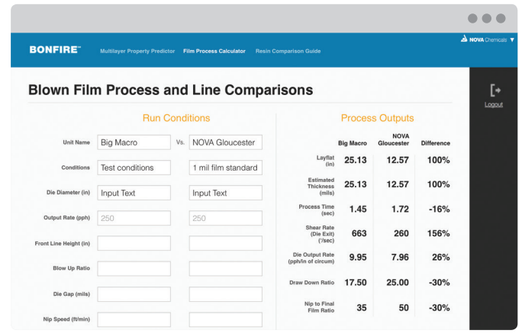
In converting operations, multilayer film structures can undergo thermal heating or cooling that is influenced by coex design, materials, and layer placement. The heat transfer module predicts the temperature of any layer within a co-ex film as a function of time and other parameters.

Work with your NOVA Chemicals' Technical Service Specialist.



Resin Comparison Guide

Resin selection can be complex and challenging. The resin comparison guide allows users to compare the physical, barrier and optical properties of two resins to help identify the best candidate for inclusion in a new structure design.



Blown Film Process Calculator

Blown film processing conditions can affect film properties. This module calculates important blown film processing parameters and allows users to compare and contrast parameters for different lines or run conditions.