

BARRIER TECHNOLOGY



PACKAGING

## AG. CHEM. PACKAGING: PREVENT PANELING, EASY PROCESSING AND REDUCE COSTS

The best barrier technology for packaging agricultural chemicals

Inhance Technologies' Fluoro-Seal Process™ enables monolayer HDPE bottles for packaging of pesticides and herbicides, providing the best barrier performance at a lower cost to OEM's, distributors and converters

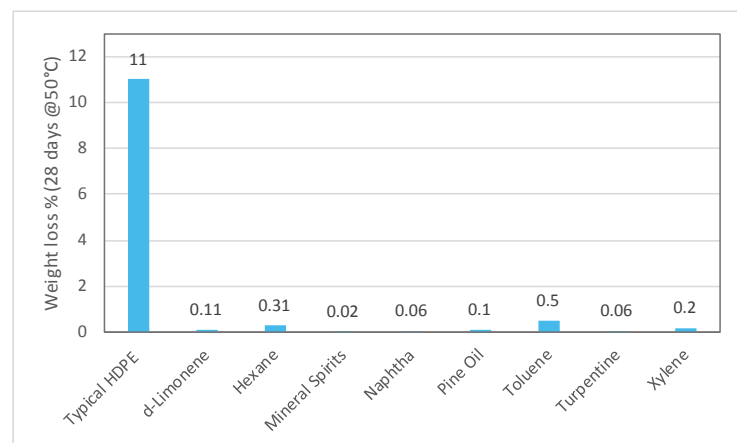
Wall Paneling and flagging of the labels on plastic chemical storage containers is a huge liability for the brand. Furthermore, the loss of chemicals through container walls is a significant environmental hazard. The use of heavy and costly metal containers, while a solution, is largely cost prohibitive and adds unnecessary weight increasing transportation costs.

Inhance Technologies' Fluoro-Seal Process™ modifies the surface of monolayer HDPE containers, providing barrier and chemical resistance against solvents and other ingredients of agricultural chemical formulations. This change on the surface of the is permanent and greatly decreases the permeation of solvents and active ingredients through the walls of the containers. The unique proprietary process imparts barrier on the inside as well as the outside of the container, providing a double layer of protection against chemicals. Fluorination allows for lightweighting of HDPE containers while passing relevant EPA and DOT regulations. Fluorinated agricultural chemical bottles can also be recycled into bottles again, while maintaining properties, reducing the impact on the environment.

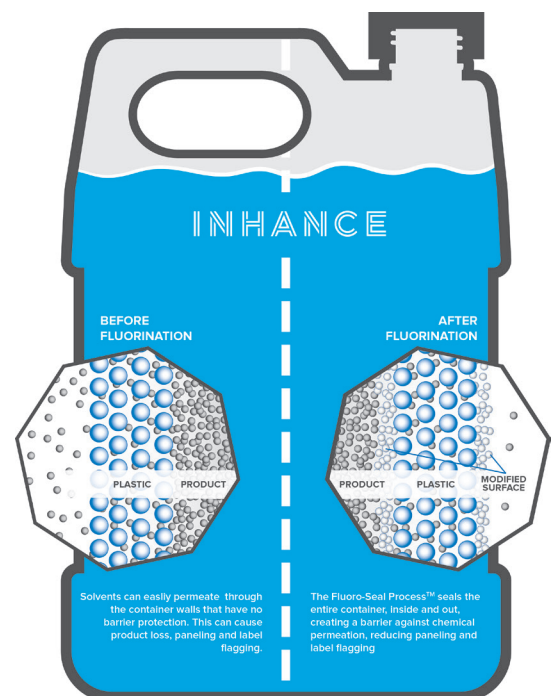
The barrier enhancements imparted to monolayer HDPE containers better than comparable PET containers at a comparable cost. At the same time, fluorinated containers can be produced at a fraction of the cost of multilayer containers, providing the same barrier performance.

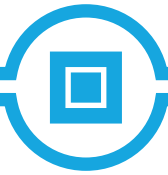
Fluorinated HDPE containers are often specified by large agricultural chemical OEMs and is the preferred technology for packaging agricultural chemicals in North America and Europe.

Barrier performance of fluorinated HDPE containers



Fluoro-Seal Process™ modifies the surface of monolayer HDPE containers providing barrier





SURFACE MODIFICATION



PACKAGING

## BENEFITS

- Reduces permeation of most herbicides and pesticides through monolayer HDPE containers
- Increased chemical resistance resists swelling, fouling, paneling, and degradation of container and contents
- Prevents label flagging and delamination
- Permanent chemical modification of the surface of the material
- Consistent treatment concentrated on the surface; inside and outside of the container
- Customizable treatment for variety of materials, shapes, sizes
- 100% quality verification ensures quality and consistency from batch to batch

## APPLICATIONS

- Pesticide packaging
- Herbicides packaging
- Bulk chemical packaging
- Sprayers, nozzles and hoses
- Solvents packaging
- Industrial packaging

## Solvent Permeation Data for Select Agricultural Chemical

Solvent	Fluorinated PE % Weight Change
d-Limonene	-0.11
Hexane	-0.31
Mineral Spirits	-0.02
Naphtha	-0.06
Pine Oil	-0.1
Toluene	-0.5
Turpentine	-0.06
Xylene	-0.2



*Inhance Technologies' Fluoro-Seal Process™ has been treating agricultural chemical storage containers for over three decades with consistency and quality. Fluorinated HDPE containers are the preferred packaging for agricultural chemicals*



*Inhance Technologies solutions' can be applied in a number of industries to improve product performance and sustainability*