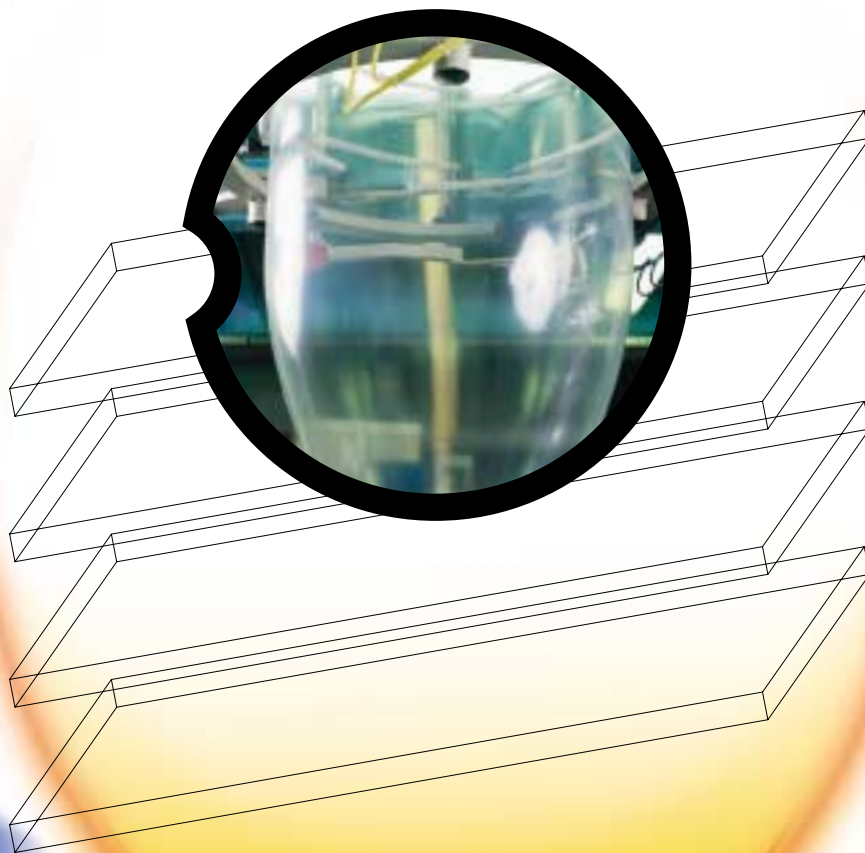


# KYNAR<sup>®</sup> FILM

MULTILAYER PVDF SPECIALTY FILM  
FOR PROTECTION & DURABILITY



PRODUCT INFORMATION

## An innovative combination of high performance polymers & multilayer technology



KYNAR® Film is the result of ATOFINA's commitment to the research and market development of weatherable alloys of polyvinylidene fluoride (KYNAR® PVDF) and acrylic polymers (OROGLAS® PMMA). The pioneering 1976 work on Adheflon® Tie Layers – to solve the dilemma of fluoropolymers notoriously poor adhesion – coupled with the development of multilayer processing has led to a range of specialty films including both mass-tinted and transparent films which can be printed with a variety of designs.

For color matching, ATOFINA has validated a library of mineral pigments with proven durability.

## A versatile manufacturing process to suit your needs



KYNAR® Film is obtained by a patented multilayer blown extrusion technology and does not contain any residual solvent or plasticizer. The blown film technology allows the production of both:

- thin or thick films – typically from 10 to 100 µm
- narrow or wide films – typically from 1200 up to 1800 mm depending on film formulation & thickness

The multilayer flexible process allows a great freedom of design. A patented Adheflon® ductile Tie Layer is built in the film, making the lamination process onto thermoplastic, thermoset or primed metal substrates easier while maintaining the impact strength of the substrate.



## Fluoropolymers for outstanding properties

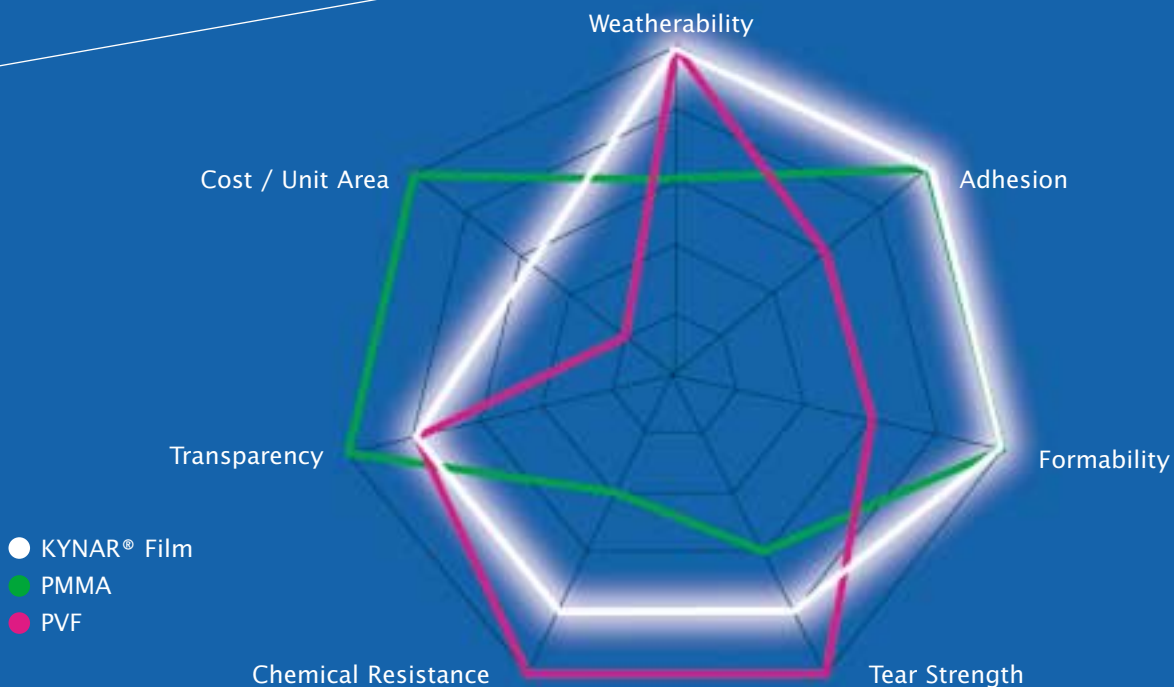
KYNAR® PVDF is a tough, engineering thermoplastic that possesses the characteristic stability of fluoropolymers when exposed to harsh thermal, chemical, and ultraviolet environments. This rare combination is due to the strength of the C-F Bond, one of the most stable bond known in organic chemistry.

KYNAR® PVDF offers the best compromise between Melt Processability and High Fluorine Content among the polymers used in Specialty Films:

	PVDF	PTFE	PVF	PMMA
Trademark & Producer	KYNAR® ATOFINA	TEFLON® DUPONT	TEDLAR® DUPONT	OROGLAS® ATOGLAS
Formula	$(\text{CH}_2\text{-CF}_2)_n$	$(\text{CF}_2\text{-CF}_2)_n$	$(\text{CH}_2\text{-CHF})_n$	$(\text{CH}_2\text{-C}(\text{CH}_3)(\text{C}=\text{O})\text{OCH}_3)_n$
Melt processible	YES	NO	NO	YES
F% (wt.)	59	76	41	0

As a solvent based coating, PVDF has been applied – under the tradename KYNAR 500® – for over 35 years to various metallic substrates and has demonstrated outstanding weatherability in terms of Color Stability & Gloss Retention. Each year millions of m<sup>2</sup> of KYNAR 500® coated metal are supplied by Coil and Spray Coaters to the construction industry.

## KYNAR® Film comparison vs. others specialty films (Clear Film)



## KYNAR® Film key properties: How does it relate to your application

UV Resistance  
UV Barrier



KYNAR® Film retains its initial colour and gloss over the years & prevents fading, chalking and loss of strength of UV sensitive substrates

Chemical Resistance



Graffiti on KYNAR® Film protected surfaces can be cleaned with various cleaning agents without leaving a ghost

Low Surface Tension



KYNAR® Film protected surfaces exhibit low dirt pick up

PVDF Miscibility with PMMA  
UV Absorber Technology



KYNAR® Film can be made optically clear yet UV opaque to protect transparent substrate (PC, PMMA,...)

Built in Adheflon®  
Tie Layer



KYNAR® Film exhibits strong durable adhesion to various substrates (PVC, PMMA, ABS, PC, Primed Metal, ...)  
KYNAR® Film can be printed & decorated

Barrier Properties  
Flexible



KYNAR® Film is applicable as reusable liner in chemicals or gas containment application

Good elongation at break



KYNAR® Film protected surfaces can be thermoformed without defects even at high draw down ratio

Thermoplastic character & large processing window  
between melting point (165°C)  
& onset of degradation (340°C)



KYNAR® Film can be recycled without degradation

Heat Sealable  
Flexible  
Good elongation at break



KYNAR® Film can be made as tough pouches or bags using simple assembling techniques

Fire resistance & low smoke  
Generation



KYNAR® Film can be used in demanding applications such as aircraft

## KYNAR® Film for a wide range of demanding applications



### TRANSPORTATION

- Train interior
- Bus interior
- Car & truck exterior body panel
- Aircraft interior



### CONSTRUCTION

- Thermoformed thermoplastics panels for facades
- Window profiles
- Transparent roofing panels
- Vinyl sidings
- Thermosets laminates for facades or interiors
- Metallic panels for facades
- Vinyl wall paper

OUR FOCUSED TEAM (R&D, PROCESS, SALES)  
WILL ACCOMPANY YOU IN YOUR DEVELOPMENTS

OUR COMMITMENT TO OPENESS & FLEXIBLE  
THINKING MIRRORS THAT OF YOUR TECHNOLOGY

PUT US UP TO YOUR CHALLENGE!

### TECHNICAL TEXTILE

- PVC Tarpaulin for tents
- Fire retardant textile
- Liner for flexible tanks
- Sails protection
- Protection of balloons and blimps



### OTHERS

- Photovoltaic
- Printed & decorated films for lamination
- Protective labels
- Gas sampling bags
- Chemical containment
- Electrical tape





ATOFINA, the Chemical branch of the Oil Group TotalFinaElf, was created in April 2000 from the merger of the chemical and petrochemical activities of TotalFina and Elf Aquitaine.

With 72,000 personnel and a turnover of € 20.8 bn in 2000, ATOFINA is the World's 5th largest chemical company.

ATOFINA is the global leader in both PVDF (KYNAR®) and PMMA Granules.

1 Pierre-Bénite KYNAR® plant

2 Calvert City KYNAR® plant

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