

100% PE Stand Up Pouch



THE PACKAGING OF THE NEW CONSUMER GOODS

Convenience is a characteristic of flexible packaging that has been increasingly attracting consumer sectors. And the option that calls more attention on supermarket shelves is the Stand Up Pouch (SUP), a flexible packaging that is able to upstand, assuring a greater visibility of the brands. The Stand-up Pouch offers a number of functionalities, such as its easy opening and closing system and directionable spouts and lids. Additionally, the SUP is produced with a lighter material compared to that used in traditional rigid packaging, what brings benefits in storage and transportation terms – more units per vehicle – in addition to making its disposal easier.

ADDED VALUE

In search for a solution to meet the challenge of finding a more sustainable alternative, Dow has developed the 100% Polyethylene (PE) Stand Up Pouch. The solution makes use of only one raw material in its structure, the polyethylene, what makes its recycling easier. To meet the demands from several sectors – among which cleaning products, beverages, cosmetics, (dry and frozen) food and building and construction – and make available a monomaterial solution to replace multimaterial films, SUP offers:

- Full and resistant sealing to avoid leaks, mainly in the case of liquids and fatty food;
- Puncture and tear strength;
- Up to 83% less plastic; rated as high density polyethylene (2) and low density polyethylene (4) and not in the “others” category (7) for disposal purposes;
- High recyclability thanks to its monomaterial composition.

With the new 100% Polyethylene SUP concept, which makes recycling easier both in the pre- and post consumption stages, wherever there is a chain, it is possible to use the international recyclability symbols: 4 (LDPE) and 2 (HDPE) instead of 7 (others), representing benefits for the whole recycling chain.



LDPE



HDPE



OTHERS





100%
PE

New!

Stand Up pouch

100% Polyethylene

83%
LESS PLASTIC*

Differentiation,
savings and
less waste

200ml



*STUDY AVAILABLE ON DEMAND

SUP IN LIQUID PRODUCTS

The Stand Up Pouch (SUP) has been especially driving two packaging segments for liquid products.

Cleaning products (laundry soap, cleaning products in general, fabric softeners): the SUP is an alternative with an excellent cost/benefit ratio once it can be used as a refill and even as the first packaging (lower volumes/unique dose).

Another important segment is the **beverage** area (water, yogurts, flavored juices and some energy drinks): at work, at home, in sports, and even in entertainment activities, SUP has been calling the attention and attracting many consumers.

Son dos los desafíos para estas aplicaciones:

- Full sealing to avoid leaks;
- Handling/puncture strength.

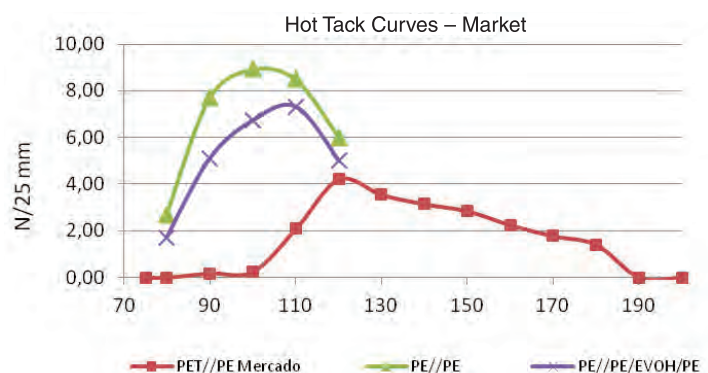
SUP structures laminated with 100% of Polyethylene are three times more resistant to punctures than the conventional packaging available in the market (PET//PE). When barrier properties are necessary (oxygen and/or smell), the polyethylene structure combined with EVOH provides an increased puncture strength.

Trial	Unit	PE//PE	PE//EVOH/PE	PET//PE
Puncture strength	J/cm ³	5,5	3,1	1,6
Thickness	µm	125	125	130

Hot Tack Curves – Market

SUP sealing properties are a critical factor. The possibility of performing this process under lower sealing temperatures provides the packaging with a high quality sealing (hermetically sealed pouches). The hot sealing curves in the following chart show that

Dow resins recommended for SUP applications offer higher strength and lower sealing temperature (regardless they are combined with PET and/or EVOH).





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DIFFERENTIATION, SAVINGS
AND LESS WASTE

SUP FOR COSMETICS

When it comes to cosmetics, the SUP keeps the properties of creams, shampoos, soaps, perfumes and other hygiene items intact from their manufacturing to consumption. When travelling, for example, the convenience of taking these products in smaller packaging or sachets is incomparable, mainly in European countries and in the United States, where new safety laws establish the compulsory use of this type of packaging.

These applications pose three challenges:

- Full and resistant sealing to avoid leaks;
- Impact and puncture strength (to avoid failures during storage, transportation, shelf life and handling).



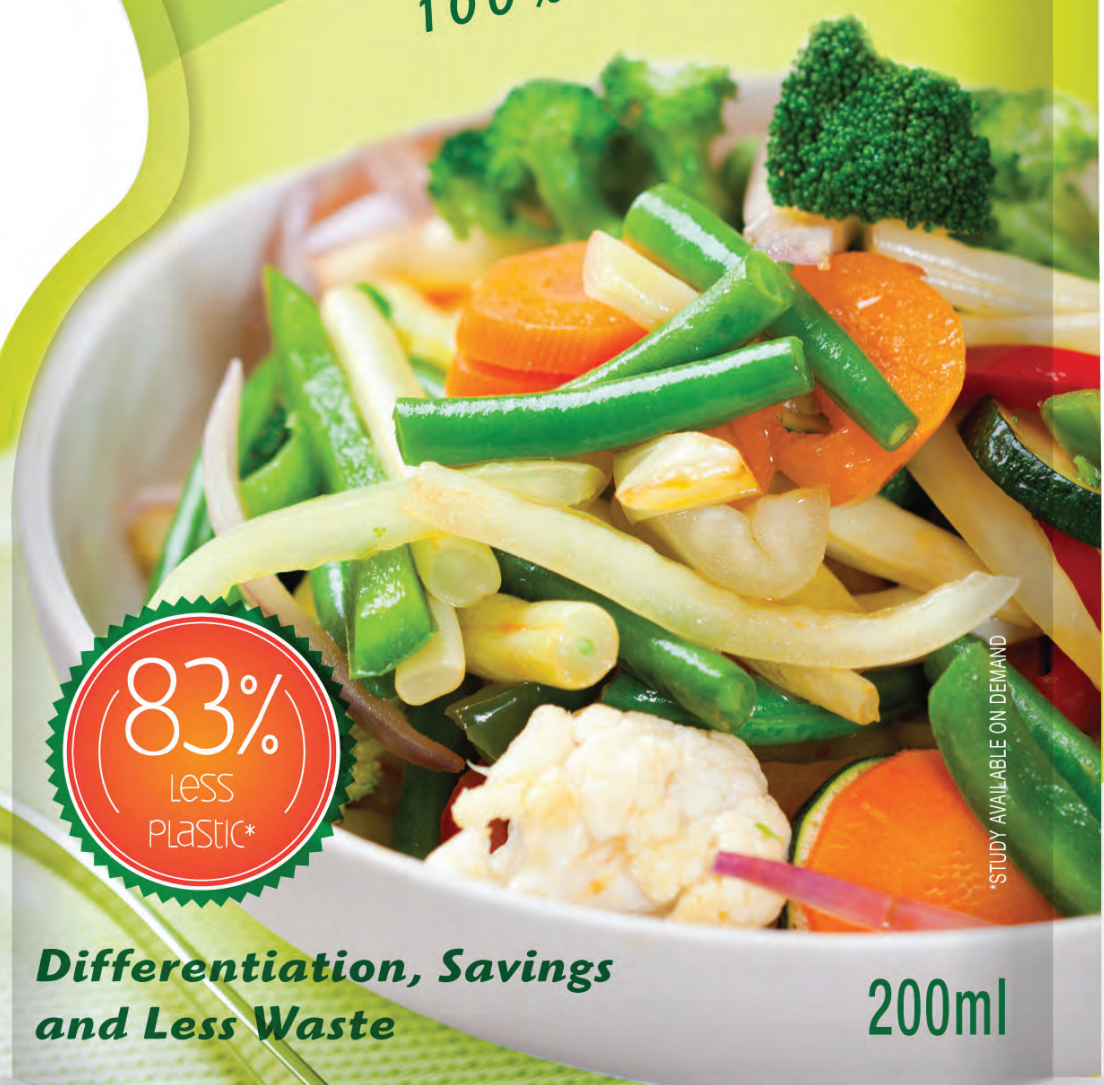
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**Differentiation, Savings
and Less Waste**

200ml

► SUP IN FROZEN PRODUCTS

The conservation of food through freezing is one of the most effective ways of maintaining the taste, color and nutritional value of products.

Broadly used, this category of products has been expanding in several food segments, such as:

- Pre-cooked and frozen vegetables and legumes – more convenience when preparing meals;
- Frozen fruit and fruit pulp – availability throughout the year;
- Animal protein-based products (chicken, fish and shellfish).

SUP has been changing the way these products are shown on supermarket shelves.

The properties required for these applications are:

- Puncture strength;
- Tear strength.

Trial	Unit	PE//PE	PET//PE
Elmendorf tear strength – TD	g	1159	122
Elmendorf tear strength – MD	g	355	155
Puncture strength	J/cm ³	5.5	1.6
Thickness	µm	125	130





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SUP FOR FOOD (DRY FOOD)

The dry food category is quite broad:

- Breakfast cereals;
- Cracks;
- Flour products - wheat, polenta, manioc, bread flour, integral flour;
- Grains – lentil, peas, beans, rice, chickpeas, wheat, corn;
- Gourmet products – salt, sugar, seasonings;
- Pie and bread mixes.

In this category of products, the Stand Up Pouch provides consumers with great convenience (ease of opening and closing) and products with a differentiation opportunity (visibility on the shelves).

These applications have several requirements:

- Moisture barrier to retain food crispness and prevent it from both losing water (so that the product does not dry) and absorbing it, so that it does not agglutinate (e.g. salt);
- Some products require a barrier against fat;
- Tear strength;
- Puncture strength.

		SUP		
		PE//PE	PE//EVOH/PE	PET//PE
Steam barrier	g/m ² /day	1,3	1.5	1.4
O ₂ barrier	cm ³ O ₂ /m ² /day	512	3	133
Thickness	µm	125	125	130



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► SUP FOR CONSTRUCTION MATERIALS

The construction material segment, which traditionally uses rigid packaging (cans, buckets, flasks) without barrier needs, has been gradually adopting the Stand Up Pouch. Much lighter, the SUP is a quite versatile alternative that differentiates the product in points of sale.

Typical applications in this category:

- Coatings;
- Additives;
- Joints.



Comparative Performance of the Structures

	PE//PE	PE//PE/EVOH/PE	PET//PE
Module	+	+	+++
Tear strength	+++	++	+
Impact strength	+	+	+++
Puncture strength	+++	++	+
Sealing integrity	+++	+++	++
Moisture barrier	+++	+++	+++
Oxygen barrier	+	+++	++

Regardless the application and whether you need barrier properties or not, Dow offers polyethylene resins and lamination and extrusion adhesives that can help you develop your SUP packaging.



For more information on products, innovations, technologies, and other services available to you from the Company, get in contact with your representative at Dow or visit www.dowbrasil.com. You can also contact us as indicated below:

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