



## SELVOL POLYVINYL ALCOHOL - A VERSATILE POLYMER FOR SPECIALTY COATING APPLICATIONS

Selvol Polyvinyl Alcohol (PVOH), provides a diverse range of benefits to coating applications. This brochure outlines the advantages and applications for Selvol modified coatings. Selvol is primarily used to protect surfaces and to act as a carrier for other additives. Selvol PVOH is an excellent film-former, can be formulated to provide easy removal and has excellent time release properties.

Water is the primary solvent used for solubilizing dry PVOH resin into solution. Selvol grades are available as dry granules or in pre-made water based solutions. Refer to our website [www.selvol.com](http://www.selvol.com) for product specs, MSDS, solution preparation guidelines and other product information.

### APPLICATIONS

There are numerous coating applications where Selvol PVOH will provide enhanced performance. Additionally, Sekisui has a dedicated Applications Development Team that can assist with grade recommendations and technical support in formulating Selvol to meet your application needs.

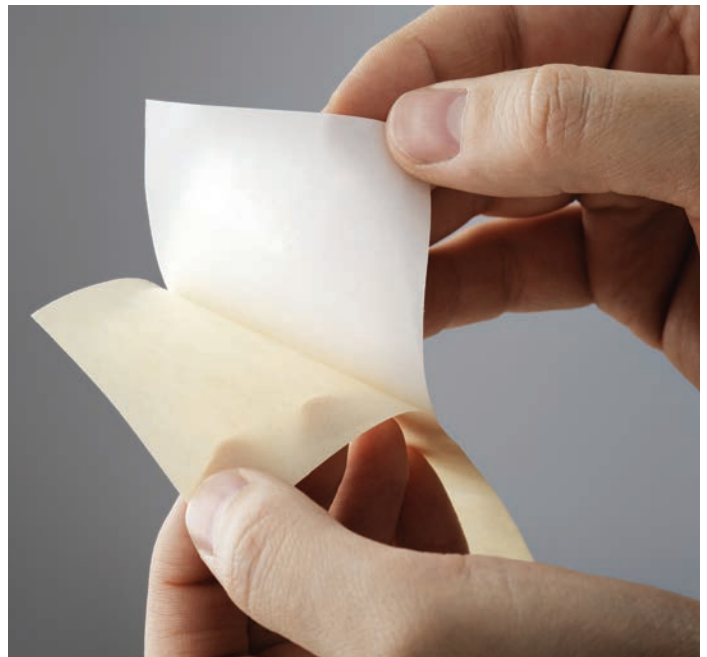


TABLE 1: Coating Application Matrix

	Peelable	Cold Water Washable	Hot Water Soluble	Delayed Release	Mold Release	Graffiti Protection	Fabric Starch Stain Guard	Carrier (color, silica, other)	Oxygen Barrier	Automobile Coatings	Dust/Erosion Control
<b>PRE-MIXED SOLUTIONS</b>											
Selvol 09-125			❖			◆			◆	◇	
Selvol 09-325	◆		◆	◆	◆	◆		◆	◆	◆	◆
Selvol 09-523	◆	◆		◆	◆	◇	◆	◆	◆	◆	◆
Selvol 21-205	◇	❖			◆		◆	❖	◇	◇	
Selvol 24-203		◆			◇			◆	◇	◆	
<b>TACKIFIED GRADES</b>											
<b>Super Hydrolyzed</b>											
Selvol 125			◆			◆			◆	◇	
Selvol 165			❖			❖			❖		
<b>Fully Hydrolyzed</b>											
Selvol 103			◇	❖	◇			◇		◆	
Selvol 107			❖	❖					❖		
Selvol 310	◇		❖	❖		◇			❖		
Selvol 325	◆		◆	◆	◇	◆		❖	◆	◆	◆
Selvol 350			❖	❖		❖			❖		
<b>Intermediate Hydrolyzed</b>											
Selvol 418		◇	◇	❖			◇		◇	◇	
Selvol 425		◇	◇	❖					❖	❖	
Selvol 443		◇	◇	❖					❖	❖	
<b>Partially Hydrolyzed</b>											
Selvol 203		◆			❖			❖	◇	◆	
Selvol 205	◇	❖			❖		❖	❖	◇	❖	
Selvol 502		❖			◇			❖		❖	
Selvol 504		◇			◇			◇	◇		
Selvol 513	◇	◇			◇		◇		◇		
Selvol 518	◇	◇			◇		◇		◇		
Selvol 523	◆	◆		◆	❖		◆	❖	❖	◆	◆
Selvol 540	❖	❖		❖	◇		◇		❖		◆

◆ Highly Recommended (request a sample)    ❖ Recommended    ◇ Possible Use



**GENERAL BENEFITS**

- Excellent Film Former
- Protective Coating
- Can be Colored or Pigmented
- Vapor Barrier
- Controlled Water Sensitivity
- UV Protection
- Low VOC
- Transparent
- Stiffener
- Peelable
- Rheology Modifier
- Biodegradable
- Water Based Solutions
- Safe (Several FDA Approvals)

This brochure provides a brief explanation of some common coating applications highlighting key performance benefits of using PVOH. Coatings of PVOH solution can be applied via spray techniques, dip processing, brush technology or solution casting films.



### PEELABLE COATINGS

Selvol solutions can be formulated to dry as a peelable coating. These coatings are used to protect surfaces from damage or contaminants in applications such as paint booths (to collect overspray), automobile protection, glass protection (to protect from scratches), as clean up aid (simplifying clean up in dirty environments), or goods transportation protection. PVOH performs well because its films are anti-static and have excellent resistance to oil, grease, dirt, paint, and tar.

Higher molecular weight grades, such as Selvol 523 or solution Selvol 09-523, produce a strong film that will peel as a continuous film. Plasticizers such as glycerin and low molecular weight Polyethylene Glycol (PEG) are commonly added to improve the flexibility of the film.

### CONTROLLED WATER RESISTANCE

With Sekisui expertise, coatings can be formulated to have different degrees of water sensitivity, influenced by water temperature and exposure time. This can be especially important when formulating a coating that will need to resist very humid or wet conditions. By adjusting parameters such as Selvol grade selection, film thickness, and inclusion of various additives, water sensitivity can be tailored to your need.



### MOLD RELEASE

Selvol PVOH can also be used as a mold release during mold construction and casting. PVOH is applied as a coating on the mold, providing protection for the mold and aiding with release of the molded product. This can help reduce costs when compared to typical oil/wax based release systems. Partially hydrolyzed Selvol grades, easily removed with water, can reduce or eliminate hazards associated with use of harsh mold cleaners needed for other systems. Finally, the finished product can be further processed without any resin residuals present.

Selvol is also used as a parting film with wax, silicone and other mold release agents. The film helps in reducing styrene migration, provides some protection from wax softening from high temperatures, and protects the final part from residual silicone, which is difficult to paint.

### GRAFFITI PROTECTION

Because Selvol PVOH is resistant to most solvents, it makes an excellent coating to protect surfaces prone to graffiti or vandalism. Fully hydrolyzed Selvol 325 can be formulated and applied with the right film thickness to protect surfaces and withstand outdoor weather for up to a year. Surfaces include walls, murals, signs, signs, railcars, busses, and other areas where graffiti could be an issue.



### FABRIC STARCH AND STAIN GUARD

Selvol can be used on finished textiles to improve stiffness and stain resistance. PVOH is especially effective on synthetic fabrics, where natural starches are ineffective. PVOH is easily removed with water, unlike emulsion starches.

Because of Selvol PVOH's high film strength, less PVOH solids are needed than starch or emulsions to produce the same level of stiffness. Selvol grades such as Selvol 523 and solution Selvol 09-523 offer the best combination of strength and flexibility for this application. Parts per million (PPM) levels of specific biocides allow Selvol solutions to last up to a year without spoiling.



## CARRIER

Polyvinyl alcohol is an excellent barrier to oil, grease, and most solvents. The PVOH film is also a barrier to oxygen, nitrogen, and other gases. Such barrier properties are of great interest in the food packaging industry, where PVOH has FDA approvals for food contact applications.

## AUTOMOBILE COATINGS

Selvol PVOH can also be used as an effective, removable coating to protect automobiles from dirt, oil, and small scratches, as well as being an excellent bug shield. Selvol PVOH provides a clear, virtually invisible coating on headlights and polymer moldings.

An automobile coating could be formulated to be peelable or washable, depending on the application and desired approach, and could be applied to almost the entire vehicle, including the tires, undercarriage, front end, windows, and exterior cargo areas (such as truck beds).

## PAPER COATINGS

Selvol PVOH is used extensively in the paper industry as part of coating formulations to enhance strength, improve optical brightness, and resist oil and grease. Sekisui has extensive expertise in formulating Selvol PVOH for use in paper coatings. Our Houston Technology Center is ready to assist you with your application. Contact them at +281-280-3460.



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