



**Owensboro Specialty Polymers, Inc.**  
Chemistry that Connects, People that Care

# What is PVdC?

## DARAN<sup>®</sup> PVdC LATEX POLYMERS

**Owensboro Specialty Polymers, Inc.**  
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OSP\_TDS\_DaranBrochure2\_Rev.1

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# **What Is PVdC?**

## **Three Forms of PVdC**

PVdC is the acronym for polyvinylidene chloride. It comes in three basic forms, latex (aqueous emulsion), solvent soluble resin, and extrudable or blown resin (melt processable). All three forms begin with the key monomer, vinylidene chloride. Owensboro Specialty Polymers, Inc. (OSP) only manufactures the latex form sold under the OSP trade name of Daran<sup>®</sup>. This form requires the PVdC latex be coated on a substrate and then dried. The same is true for the solvent soluble PVdC resin but you then must deal with solvent recovery. The solvent soluble resin is used in coating applications where water is detrimental. The extrudable or blown resins are used in applications where PVdC film is preferred.

PVdC latex is used in applications where a base substrate needs more barrier properties, particularly gas and water vapor. PVdC also provides excellent barrier to flavors, oils, greases, many common solvents, and odor as well as giving abrasion resistance and heat sealability. Additionally, PVdC coatings are odorless and tasteless.

## **The Chemistry**

All forms of PVdC are polymerized using the base monomer of vinylidene chloride. PVdC latex will always contain at least one co-monomer. The co-monomer gives the polymer more characteristics that help with specific applications. PVdC without a co-monomer is too brittle to form a continuous film.

Daran PVdC latex does not incorporate any plasticizers. Non-phthalate plasticizers are used in the resin forms. PVdC is many times confused with PVC. PVC is made from the monomer vinyl chloride. Flexible forms of PVC may contain phthalate plasticizers. Vinyl chloride and vinylidene chloride are different chemicals. Vinyl chloride is not a component of any of OSP's products.

## **PVdC and the Environment**

PVdC in its various forms has been accepted and safely used in food packaging applications for almost 60 years. It is approved for food contact by many regulatory agencies around the world. PVdC used in flexible packaging has several attributes that offer advantages to other forms of flexible packaging in terms of being friendly to the environment.

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## **Source Reduction**

PVdC provides excellent barrier in flexible packaging, especially with regard to moisture and gas barrier. This helps keep food fresher longer which can reduce waste due to food spoiling before it can be used. The amount of PVdC used in a package to achieve the barrier needed to provide longer shelf life for products is significantly less by weight than most other flexible packaging substrates. This, in turn, reduces the weight and volume of the overall package decreasing the amount of packaging that may go to a landfill.

## **Incineration**

PVdC can be and safely is incinerated. Of course the incineration must be done according to established industry standards. When this is the case harmful residues, like dioxins, that have caused concern in the past will not occur.

## **Landfill**

PVdC products, once they have formed a film, are extremely stable. They will not produce hydrogen chloride gas. They will not leach toxins into groundwater.

## **Recycling**

Due to the fact that you need such a small amount of PVdC to achieve your barrier needs, there is very little in the post consumer stream especially compared to polymers like PET. Also, since PVdC latex is always used in a multilayer film, it is difficult if not impossible to segregate PVdC from other polymers in a waste stream. If PVdC could be easily segregated, it could be easily recycled. Therefore, PVdC typically can only be recycled in a general non-specific plastic recycling program.

## **OSP Daran PVdC Latex Products**

OSP offers several different grades of PVdC latex designed for various applications. Our current commercial products include the following.

### **Product**

Daran SL112  
Daran SL143  
Daran SL159  
Daran 8100  
Daran 8550  
Daran 8730

### **Designed Application**

High barrier paper coating  
Board coating  
Lower heat seal applications  
Thermoformed film coating  
High barrier film coating  
Extra high barrier film coating

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Please note that all of these products have found applications well beyond their designed application including the coating of metal to prevent corrosion. If you have an application where you think Daran PVdC latex might work for you, please contact us to discuss which product may suit your needs best.

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