

Confused About Impregnators & Sealers, Water Base vs. Solvent Base & VOC Compliance? – Here's Some Straight Talk

It's interesting to look back through the history of impregnators/penetrating sealers and their importance in the market place. In the early days of tile and stone installation sealing tile, grout or natural stone was not an accepted practice. Sealing was looked upon as a nuisance more than an aid. Every possible excuse you can think of was used: "I don't want the liability of sealing", "I have had problems using sealers in the past", "I have to charge extra to use a sealer", "I don't want to come back for the extra day it takes to seal", etc., etc.

Due to technological advances in the tile and stone industry too numerous to mention, better education and many protection product developments, the attitude has changed dramatically over the past 20 years. Now sealing is not only accepted, but in many cases it is specified.

Customers have learned first hand of the value added anytime an impregnator/penetrating sealer is used:

- The limestone importer benefits by dramatically increasing their limestone sales because they can specify limestone for surface applications that previously they would not have without the application of an impregnator/penetrating sealer to eliminate potential staining.
- The contractor doesn't charge the customer for using an impregnator/penetrating sealer as a grout release because it saves 45% in the labor associated with grout removal. And it is less costly to use a grout release than to come back the next day for an acid wash.
- The janitorial staff spends 40% less time in the bathroom, shower and kitchen areas because they clean up much easier after surfaces have been sealed with an impregnator/penetrating sealer.

The unfortunate side of all the increased popularity is the appearance of many overnight experts; large and small. When once there were a half dozen impregnator/penetrating sealer companies to choose from now there are dozens. A great deal of inaccurate information has been passed on. Many misleading statements associated with product performance and VOC Compliance are being made.

How do you know what is true? How can you separate the true experts from the "overnight" experts? How do you get helpful information and separate fact from fiction? This article will try and address those questions among others.

What Is the Difference Between Solvent Base and Water Base Impregnators/ Penetrating Sealers?

The only way to protect the substrate is to penetrate it with something that will carry the protection into it. The protection can be silicone, silanes, siloxanes, fluoropolymer, etc. But it has to be carried into the substrate and typically it will be one of two vehicles: solvent or water.

Solvent will allow varied and typically deeper penetration into the substrate than water. The curing process, which is a result of evaporation in most cases, can be adjusted by using different solvents. Solvent base products can be cross-linked, allow a wider temperature window for application, better durability and typically are unaffected by exposure to cold during storage and transport.

Water is hydroscopic and will hold out on the surface. The protection cannot penetrate any deeper than water will. For many dense substrates like porcelain or polished granite, water will not penetrate very deeply leaving the protection on or at the surface, hence the poorer durability to wear and tear over the long term. Any polymer can be emulsified, but unlike solvent base products they cannot be cross-linked (cured) to give best performance and durability.

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511 Impregnator - Solvent Base

511 H2O Plus - Water Base

What Can An Impregnator/ Penetrating Sealer Do?

An impregnator/penetrating sealer will resist water, oils, grease, mold, mildew, algae, efflorescence, graffiti, grout dyes, mortar haze, acid rain, atmospheric dirt, lime deposits, soap scum and other penetrating items. In addition, an impregnator/penetrating sealer will make the surface less slippery, harder, allow water vapor transmission and not change the natural look of the surface. The theory is to make the surface easier to keep clean and pristine by using an impregnator/ penetrating sealer.

Are Solvents Being Eliminated and is Water Base Safer Than Solvent Base?

There is a great deal of misinformation, confusion and deceit in the field regarding solvent and the potential elimination of solvent, as we currently know them. Let's begin by stating clearly: "SOLVENTS ARE NOT IN DANGER OF BEING ELIMINATED ANY TIME SOON!" Contrary to some information being spread in the field, even non-VOC exempt solvents are not in danger of being eliminated any time soon. In California where the regulations are by far the toughest, CARB is looking at the "Landmark" Global Warming Law to reduce emissions by 25% by 2020. That is a far cry from solvent elimination. And we must remind everyone the rest of the nation is far, far behind California with such issues.

For point of reference the solvents Miracle Sealants uses to blend products like 511 Impregnator, 511 Porous Plus, 511 Seal & Enhance, 511 CST and Grout Sealer are ALL on the USA Green Solvent listings. In addition, these products are rated a 1 (0 - 4 with 4 most hazardous) in

toxicity (similar to laundry detergent). They are NOT FLAMMABLE and can even be shipped by air. All too often solvents are viewed as toxic and hazardous, but if you inspect the HMIS ratings which every product has on the Material Safety Data Sheet you would see many of the so-called "SAFE" water base products actually have a higher hazardous/toxic rating than the 511 products. The point, just because it contains solvent does not make it more TOXIC or HAZARDOUS. One thing has nothing to do with the other but many are trying to mislead in this area.

Are Water Base Less Or More Toxic Than Solvent Base Products?

Some water base products contain PFOS or PFOA, which is ABSORBED into the human being and harbored in organs and various systems within the body (Public Record). These components can be inhaled or absorbed through the skin. As a result, there is a mass-industry push to eliminate these chemical

by-products as quickly as possible but certainly not before 2010.

It is important to remember to consider all information when evaluating the potential danger of using a particular product, solvent or water. The ingredients do make a difference on toxicity and hazardous nature of any product.

What is a VOC?

VOC are the initials for Volatile Organic Compounds. VOC are solvents that are photo-chemically reactive, which for us lay persons means, they potentially have an effect on smog and the environment. This means solvents including Trichlorethane 111, odorless minerals spirits, alcohol, etc. are being used less and less in any number of products.

What are the classes/categories for VOC Compliance?

The rules pertain to Architectural Coatings as defined by Rule 1113. Suffice it to say impregnators; penetrating sealers and coatings are all governed by this definition. The requirements vary from region to region or state to state. There is also a consumer commodity requirement, which MSC products do not fall under for VOC requirements.

What products are affected?

Typically anything that is a coating, enhances color, seals or protects can be classified as an Architectural Coating, Sealer or Finish. This is the class most impregnators/penetrating sealers are being lumped into, but there are sub-classes within categories and each manufacturer chooses which one their products fall under based on given criteria. Ultimately the governing bodies will place the product into the "strictest" category in the case a product fits multiple categories.

What has Miracle Sealants Company done to deal with the VOC guidelines?

MSC has developed a good working relationship with the SCAQMD. We stay in constant touch to keep abreast of all things going on.

MSC has hired a Regulatory Specialist to continue to monitor all guidelines in all states that might have an effect on any MSC product. To identify and help create solutions to ALL regulatory issues that may arise each day.

MSC will stay on top of the ever-changing climate associated with all sorts of chemicals.

MSC has completed a state-of-the-art manufacturing plant to insure proper quality control with complicated blends.

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