

# There are several things to consider with regards to YOUR EXPECTATIONS OF A CHEMICAL INJECTOR.

Yes - the 'Super Suds Sucker' is the injector of choice in the industry. I engineered that injector when I was a contractor myself and realized that if I couldn't get enough product on the surface I could not expect great results. Also, since we washed a lot of truck fleets it was necessary to have an injector that drew chemical when using over 300' of high pressure hose.

First consideration - we need it understand how injector draw rate are measured from an engineering standpoint. When the performance of an injector is 'bench tested' it is done so under ideal conditions. Some of those conditions are; there is no discharge hose after the injector so there is absolutely no restrictions on the discharge side of the injector. There is a precise water supply furnished to the injector. Chemical is not being introduced into the inlet side of the injector - just water.

The way an injector works is by the velocity of water that passes over the chemical inlet chamber. The higher the velocity the more draw. So if you have a 5.5 GPM system and you use a 2-5 GPM injector you will have a much higher velocity and you will be able to introduce more chemical into the stream. Ideal? Maybe, but there is a trade-off. In order to produce the higher velocity you are reducing the size of the nozzle in the injector. When you do that you also reduce the water flow of the machine.

For example: Let's say you *do not* have a chemical injector at the end of the wand and you are using a 6,0 nozzles size which is the typical nozzle size for a 5.5 GPM machine. Now you put the smaller injector on and it is a 2-5 GPM injector. Remember that inside of that injector there is a nozzle as well and you have just reduced the size of that flow rate to below 5 GPM. Where did the excess water go? It went into 'by-pass.' So - you are thinking you have a 5.5 GPM machine and you do - so long as you put the correctly sized injector

on or you are running without an injector so the only restriction the system sees is that 6.0 nozzle at the end of the lance that you set the machine up with.

Before we get into options here is a factor that is given very little consideration as well as some 'grammar school' math that needs some to be discussed BEFORE we start blaming the injector for poor performance. CHEMICAL? Early on as a contractor - after buying everyone's 'claim-to-fame' detergent I realized that if I planned on making Mobile Washing a profession I had to figure out a way to produce my own chemical. It didn't take long to realize that the problem with most products was the fact that they contain large amounts of 'fillers' which are nothing but low value, low cost detergent bases that provide little to nothing to the performance of the product. They just add weight which typically translates into 'profit.'

So - with this in mind you can see that the performance of an injector relies a lot on the products being injected. Here is my 'grammar school' math which I rely on often. If product 'A' is twice as concentrated as product 'B' but the injector being used on product 'B' draws twice as much chemical as the injector being used to inject product 'A' wouldn't they both produce equal results. Concentration levels of chemical play a huge role in performance.

With respect to chemical quality - the general rule of thumb used when manufacturers produce products is - if you can get 1 pound of powder to mix into 1 gallon of water without any of the product 'falling out' or 'floating' then the product is considered to be a quality product. Interestingly when you get to that 1 pound to 1 gallon ration most manufacturers have reached their saturation threshold which means - that is all then can get to 'hold up' in 1 gallon of water. We are the only company in the industry that can blend

three (3) pounds of most of our products into one (1) gallon of water without any 'fall out' or 'floating.' Now that is what we, as ex-mobile washers call a 'concentration.'

As you can see - the 'draw rate' of an injector is one thing but equally as important is the concentration level and quality of the detergent.

Now - as most in the industry know - EnviroSpec bring more ideas and new products to the market every year than all other manufacturers combined. One of those ideas was to 'force-feed' chemical to the injector. I did that by engineering the Allison Chem Induction System which comes standard with an Allison Super Suds Sucker. With this system you simple hook one chemical line to the injector and the other goes into the detergent. The pump has a pressure switch so unless you are calling for chemical the pump is not running. You can expect to double or triple your chemical induction even over the high drawing capacity of the 'Super Suds Sucker.' The only draw back is - you have to have a battery to make it work. If you have a battery on your pressure washer you are all set. If you do not then a 'stand-alone' battery will generally last a couple of days before you have to recharge it.

A WORD ABOUT FOAMERS: Foamers are great. The only problem with a foamer is people do not understand how they work and how to use them. To begin with excellent foam will only occur if you have the correct foaming surfactant in the detergent. Most products have very little foaming surfactants in them simply because most contractors could care less about high foam. Using a foamer without a good foaming product is like having a Corvette with an Ford Pinto engine and being mad at the Vette because it won't run 140 MPH. The same holds true with the injector. Both require the correct products (engines) of optimum performance. --John Allison