



# Tech Bulletin

Advancing the Science of Traction

Tech Bulletin prepared by Jason Rueckert, Technical Consultant-Traction

## Traction Compound Application

With the application of traction compound, there are three basic objectives — performance, consistency, and safety. This bulletin is intended to provide information on performing basic track preparation to help in achieving all three objectives.

### TRACK EVALUATION

Walk the track from start to finish and get familiar with the surface. All tracks have unique characteristics and will need to be prepped differently according to surface conditions, tightness of asphalt, and finish of the concrete. Look for oils, dirt, heavy rubber build-up, cracks, water seepage, and anything else that may need special attention before applying compound. Track prep is a lot like painting, i.e., it's only as good as the surface being sprayed. Thus, time spent preparing the track before spraying is crucial to how well the surface will hold up throughout a race.

### SCRAPING

Tools for scraping vary greatly, so find something that works well for you — but by all means, make sure it fits the hand of everybody in your crew. Before every race it's important to scrape the first part of the track, starting from the water box to at least 60' past the starting line and even farther if the launch pad is concrete and there's a lot of rubber build-up farther down the track. To remove excess rubber, heat must be applied. With experience, a combination of temperature and speed can be found that will soften the rubber to the point that excess rubber can be scraped off while leaving a thin, smooth layer on the surface.

Sometimes during this process, small patches of rubber come up to expose the track surface. This indicates an area where the rubber was not properly adhered to the track to begin with, so it simply represents an opportunity to prepare this area to hold rubber properly to preclude problems later on. Be careful not to overheat the surface, as this will cause the rubber to burn or even crystallize. If the rubber is overheated, its adhesion to the track will be weakened and it will cause the rubber to peel away from the surface later on. The idea is to soften the rubber only enough to allow the scraper to move through it smoothly to remove only the top layer of rubber while

### VP's Traction Compound Products Include:

- **Lane Choice™ 7 (LC7™)** — Recommended for 30 to 150+ track temps. This compound will cover most all tracks. Methanol soluble.
- **Lane Choice™ 5 (LC5™)** — Methanol soluble. This is our version of old VHT. It is a concentrate and should be mixed with methanol.
- **Starting Line Resin™ (SLR™)** — Liquid resin for starting line upkeep via hand sprayer. Helps prevent and/or cure bald spots and build rubber.

leaving a thin layer on the track surface. This part of track preparation is a lot of work and not much fun, but it's crucial to establishing a good starting line and well worth the time to do it right.

### CLEANING

After scraping, the track must be cleaned and all the debris created from scraping must be removed. Blowers will handle the obvious things, but oils, antifreeze and other chemicals may require washing the track to get rid of them. One of the best ways to get rid of oil and chemicals is with simple powdered laundry detergent, but the track must be cleaned with water after using soap. Detergent cleaners or soaps must not be allowed to dry on the track before spraying.

If chemicals are used to clean the track, they may leave a residue after drying so these also must be washed off. Cleanliness is paramount when it comes to getting rubber to stick to the track surface and create a bond that will last throughout the season. After washing, the track must be allowed to dry thoroughly before spraying. Spraying traction compound on top of moisture is guaranteed to cause problems almost immediately.

Timing, or when to spray, is another important issue. The appropriate time to spray is dependent on the weather — in particular, wind — and the track's environment, e.g. adjacent to a dirt track, plowed field, desert or surrounded by asphalt. Spraying the track the night before a race is fine as long as dirt and debris will not get on the track overnight and stick to the surface. If the track is prepped and sprayed the night before, it should be drug and then sprayed with a very light mist of compound in the morning. Depending on type of cars being run, you may need to drag after spraying.

VP RACING FUELS, SAN ANTONIO, TEXAS, USA TEL: 210-635-7744 FAX: 210-635-7999

[www.vpracingfuels.com](http://www.vpracingfuels.com)

Headquarters: San Antonio, Texas.

Offices in Delaware, Indiana, California, Georgia

Independently Owned Regional VP Distribution Centers in Florida, Kansas and Washington;

Calgary, Montreal and Toronto, Canada; Sydney, Australia

## **DRAGGING**

After a thorough cleaning, it's advisable to drag the track before the initial spray of traction compound. This will put down some rubber and build a little heat in the track so when compound is applied, it will be sprayed on top of tiny bits of rubber which will break down and stick to the surface. The idea is to produce a base layer of rubber to establish a groove for the cars to run on. How much dragging depends on the scrape. If the scrape is to the concrete then you may be dragging for a few hours.

When dragging, the tires must stay in contact with the track at all times and travel at a speed that will produce just enough friction that the tires begin to smoke. This is the point at which the rubber is hot enough to transfer from the tire to the track. It's actually the rubber in combination with the compound that provides the traction. The compound "glues" the rubber to the surface, keeps the rubber from moving around, and provides adhesion for down track performance and safety.

## **CUTTING, OR THINNING, THE COMPOUND**

Methanol can be used to thin the compound to facilitate spraying the track surface (refer to manufacturer's recommendations). Lane Choice 7 (LC7) comes premixed and ready to spray right out of the drum. This takes the guesswork out of mixing. These ready-to-spray compounds also provide a consistent mixture and avoid the mess inherent in mixing traction compound with a cutter. Lane Choice 5 (LC5) is a concentrate and needs to be cut with methanol. A good starting point is a 50/50 ratio. The colder it is you will want to cut with less methanol. The hotter it is the more methanol you will cut it with.

## **APPLYING TRACTION COMPOUND**

Compound should be applied at a rate that will yield a nice, even layer and provide excellent bonding of the minute rubber particles to the track surface. It's always better to spray light coats as opposed to spraying heavier coats. Heavier coats will result in excessive build-up and a "loose" surface that is elastic and allows the rubber to move around. Again, the rubber in combination with the compound that provides the traction.

**Just Like Painting** - Like painting, the goal is to spray millions of little dots that eventually all touch each other and provide a clean, thin, even layer of compound. If paint is sprayed too heavily, it will run, drip and leave a very uneven coverage. Spray multiple light coats and it will cover without running or dripping and yield a nice even coat on the surface. Spraying compound works the same way — connect all of the dots by applying light coats instead of spraying on heavy coats.

The manner in which compound can be applied is also dependent on the equipment used, with some types allowing faster application than others. Most spray equipment works well if it is maintained and used properly. It doesn't require expensive equipment to prepare an excellent racing surface — just someone that will take the time to use the available equipment properly in the manner described above.

**Equipment Settings** - Many things contribute to how evenly the compound is applied — the speed at which the sprayer travels down the track, the height of the spray bars, the pressure used when spraying and the size of the nozzles used in the spray bar. Proper adjustment of all these variables is learned simply from experience with the track surface. However, #8 spray nozzles have been shown to provide a consistent pattern and quantity of compound on

many different track surfaces if they're kept clean. If these, or any size nozzle, are allowed to become clogged up, they'll produce a very uneven pattern of compound. Proper maintenance is the key to success, as a poor maintenance program will be reflected in a poor quality track surface.

The height of the spray bar should be maintained at a level that lets the compound mist onto the surface. There is a fine line between too high and too low. Too high and the compound will be too dry to bond to the track, too low and it will go on unevenly and pool up. If it is windy the day that you are spraying, compensate by lowering the height of the spray bar or slow your speed down as you apply.

**Curing Time** - Whenever possible, allow one to two hours of cure time for optimal bonding to the track, although technically, traction compound can be driven on within minutes of application. It also depends on where the track is located geographically. Some southern tracks can spray the track and run on it within twenty minutes. Initial passes with the sprayer should start in front of the water box and continue down the track about 100' past the finish line. Spraying in front of the water box will prevent excessive build-up of rubber and will help keep trash and dirt from getting to the starting line. It also provides a good spot for the cars to 'hook up'; many weak parts fail coming out of the water box as opposed to on the starting line. It's much easier to clean up a mess behind the starting line rather than on the starting line, and it will keep your program moving along faster.

It's actually best to spray past the finish line because 1) it provides a safety zone for the racers that are on the brakes at the end of the track and 2) you won't create pools of compound at the finish line when turning around with your equipment to head back up the track to continue spraying. Also be careful not to pool compound on the starting line during turnarounds on that end of the track.

**Proper Spraying Procedure** - Move from water box to past the finish line right down the groove, then move over to the right side of the lane and spray from 30' behind the starting line to the finish line, then move over and do the same to the left. Repeat the same pattern down the middle, down the right, down the left, etc. Always make an equal number of passes in the left and right lanes so the surface in both will be equal. It's also recommended that at least one pass (preferably be made while spraying all the way to the guard rail as well as up against the center stripe. This is a safety issue for the drivers. Many times, spraying this part of the track has been the difference between a car being saved and one that hits the wall or gets into the other lane and tangles with the opponent. It's a small price to pay for customers' safety.

**Less is More** - It's a common mistake to think that more compound equals better traction. It's better to drag the track and apply light coats of compound until the proper traction is achieved vs. spraying excessive compound because a driver is in your face about how his car won't hook up. It's also easier to apply more compound than it is to remove excess, and layering on too much will cause the track to become loose.

**To Drag or Not to Drag** - We recommend dragging after spraying only if you have fast cars coming up first, such as Pro Mods or small tire high HP slick cars. This will take the shine off the groove and help to get these cars down. For radial prep I suggest a quick drag down and back in each lane right after you park the sprayer for your touch up. If you start with slower cars, then they will bust the shine off and

start to make your groove. It is recommended that you wait approximately 10 to 15 minutes before you drag after spraying the initial spray. Remember, all tracks are different so these are just guidelines.

After experimenting with your surface you'll know how much compound to apply before each race. To achieve a consistent track, it must be scraped, cleaned and sprayed before each race. It's a lot of work but you'll benefit when racers begin to know your track is consistent and safe and car counts start going up.

#### **TRACK OIL DOWNS AND OTHER TOUCH-UPS**

Track staff must be trained and prepared to respond quickly when oil, liquids or debris get on the track — the quicker the response time the faster the cleanup. Don't get caught like some tracks that don't have rags within 100' of the starting line.

**Oil Downs** - Absorb spills with hull ash or equivalent, or special chemicals that are produced specifically for track clean-up. The more that can be soaked up the less that will be allowed to get into the cracks and crevices of the track surface. If it's an excessive spill, the surface may need to be washed and cleaned. Heat may need to be applied to burn it off, especially with synthetic lubricants. While it's seldom productive to blow up at the driver that caused the mess (he's probably more embarrassed than you are upset about the cleanup) it's a good idea to remind drivers not to drive all the way down

track in the middle of the groove after blowing a transmission on the starting line! Once the cleanup is done and the track is dry and free of debris, then bring the sprayer and apply light, even coats of compound until the track is good again. It's best to alternate between a coat of compound and dragging the area. You'll feel the surface come back by the way the tires drag and start to pull down.

**Starting Line Touch-Ups** — Touch-ups are often required at the starting line, in particular for bald spots or after a bunch of laps are made on the track. VP's Lane Choice can be used right out of the drum using a hand sprayer to "tack" up the starting line. It only takes a light mist to cover these spots and the track will be ready to race by the time the sprayer is put away. The next couple of cars with slicks will bring the track right back into shape. If bald spots start to occur, then it's time to use VP's Starting Line Resin (SLR). SLR is a liquid that is to be sprayed on bald spots with a hand sprayer. Do not dilute it — it is ready to use. Use it in situations that you would normally use a powdered resin. You don't have to burn SLR in or spray any traction compound on top of it. It will cure up in 5-10 seconds. The next car can launch off the freshly sprayed spots and will put down fresh rubber thus eliminating the bald spots. Lane Choice and SLR have cohesive properties that greatly reduce the amount of bald spots and resist tire spin problems that occur with street tires.

**Spraying Vs. Dragging** – Generally during an event if the track starts to “go away” you need to determine what needs to be done. If the stick has gone away and the rubber isn't loose from being built up too much or too much heat, spray a light mist on the track and drag it really quickly. This should bring back the adhesive properties. If the rubber is too thick and you don't have time to scrape or the track is hot and loose, drag the track to firm up the rubber and don't spray as you're just adding liquid and this will make it worse. Now there are exceptions to these rules. Especially with radial tire cars. They benefit from more stick and even if the

track is loose, they still need a lot of adhesion to make it down the track.

#### **EFFECTS OF THE ELEMENTS**

Track temperature is your best friend or your worst enemy. At extreme temperatures, traction is at it's worst for several reasons. Oils, liquids, etc. in the track start coming to the surface and moisture starts travelling upwards. Traction compounds start losing their ability to keep the rubber stuck to the track. No matter what compound is used, excessive cold (below 40 degrees F) and heat (above 140 degrees F) are tough to deal with. These track temps are the extremes but our LC7 was formulated to handle these extremes. The track will stay more consistent from day to night with LC7. If you have any other questions please send an email to [Jason@vpracingfuels.com](mailto:Jason@vpracingfuels.com) or call 812-878-2026.

