

halo.
By Orthene.

SPECIALIST RACING BRAKE FLUID

Drive fast. Brake last.

halo.
By Orthene.

SPECIALIST RACING BRAKE FLUID

Drive fast. Brake last.

**Your new specialist racing
brake fluid partner**

01

About Halo by Orthene

**We are the only
specialist brake
fluid producer
in the world.**



Halo by Orthene





Motor
the Fluid
Specialists
have been
performance
over 45 years.
Technology™,
ability and pedal
range, and
professional
P1 is for track
highway use.
boiling point
boiling point
RECOMMENDATIONS
contamination with dirt,
may result in
CONTAINER.
TO PREVENT
all immediately

halo.
By Orthene.

P1

SPECIALIST RACING
BRAKE FLUID

Fade Resistant Technology

646°F 341°C
Typical dry boiling point



halo.
By Orthene.

P1

SPECIALIST RACING
BRAKE FLUID

Fade Resistant Technology

646°F 341°C
Typical dry boiling point

halo.
By Orthene.

P1

SPECIALIST RACING
BRAKE FLUID

Fade Resistant Technology

646°F 341°C
Typical dry boiling point

halo.
By Orthene.

P1

SPECIALIST RACING
BRAKE FLUID

Fade Resistant Technology

646°F 341°C
Typical dry boiling point

halo.
By Orthene.

P1

SPECIALIST RACING
BRAKE FLUID

Fade Resistant Technology

646°F 341°C
Typical dry boiling point

halo.
By Orthene.

P1

SPECIALIST RACING
BRAKE FLUID

Fade Resistant Technology

646°F 341°C
Typical dry boiling point

About Halo by Orthene

Orthene is the world's largest specialist racing brake fluid manufacturer.

Halo is our new high-performance brake fluid brand. Here's what sets us apart.

01

Excellence

We quality control everything to the highest standards – from product development, source materials, production, packaging, distribution, right through to customer service.

02

Performance

Our products are more than a match for any competitor on the market on any criteria. We simply produce the best brake fluid in the world.

03

Innovation

We have been, and continue to be, at the forefront of brake fluid technology and innovation since 1976.

Halo by Orthene in numbers

48

The number of years
we've been obsessed
with brake fluid

65%

Of the world's racing brake fluid
is produced at Orthene HQ in
North-West London

300+

Brands already trust
Orthene to manufacture
their brake fluids





Halo P1
The world's highest-
performance racing brake fluid

002



Halo by Orthene

What makes Halo P1 unique

Halo P1 gives you the confidence to race as hard as you can from the first lap to the last.

01

Purity

Crafted using the purest methyl borate ester which goes through a proprietary multi-step purification process before beginning the reaction process. Impurities degrade performance, reduce boiling point, and create instability at high temperatures. This is why we remove them.

02

Highest boiling point

The purity of Halo P1 allows it to reach an extremely high boiling point of 646°F / 341°C. This means that Halo P1 is able to achieve and maintain a consistent performance up to the highest racing temperatures.

03

Extremely low compressibility

Featuring Fade Resistant Technology™, Halo P1 is a highly polar fluid. Polar molecules don't like to occupy the same space, and so resist being compressed. This makes Halo P1 extremely incompressible across a wide temperature range which gives a very stable pedal feel throughout the race.

04

Lubricity

Lubricity at high temperatures protects and maintains the brake system at high temperatures. Halo P1 has special additives reacted into the backbone of the product to ensure the highest lubricity even at high temperature. This is particularly important for ABS systems and for consistent caliper roll-back.

What makes Halo P1 unique

646 °F
341 °C

The highest dry boiling point of
any brake fluid in the world.

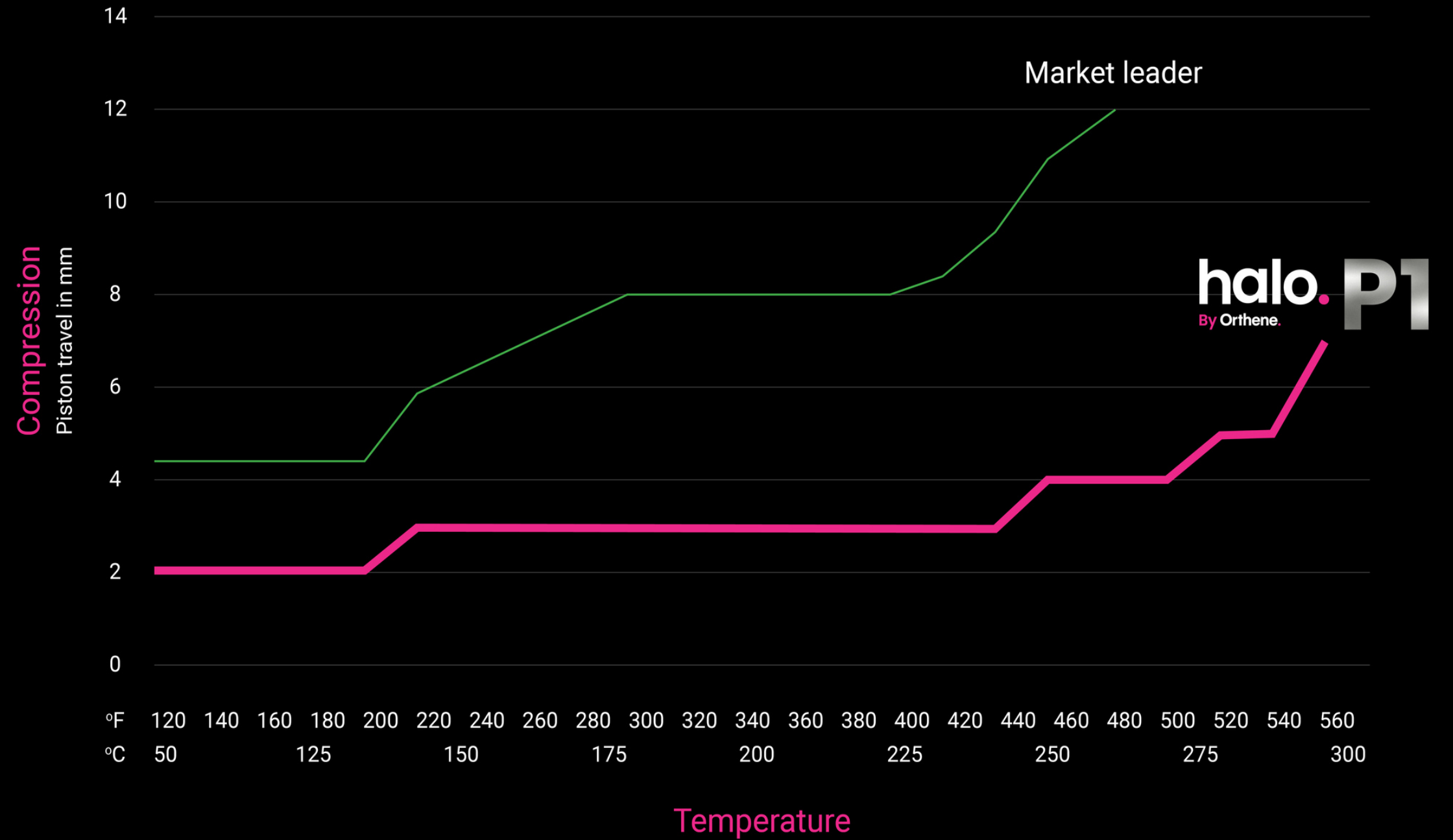
Halo by Orthene



Dry vapour lock test

Low compressibility over an extended temperature range

Compared to the market leader, Halo P1 delivers lower piston travel, resulting in a more consistent and stable pedal across the entire race distance, and across the widest temperature range.

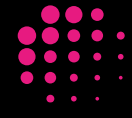


Benefits on track



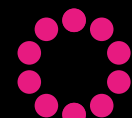
Consistency

Independent telemetry from race teams shows that corner after corner, Halo P1 outperforms the competition in terms of pedal travel and brake pressure, and maintains this consistency at high temperatures. Consistency contributes to driver confidence and smooth braking events.



Fade Resistance Technology™

Halo P1 is extremely resistant to fade. It comes into its own under high temperatures, on tracks with high level braking events, and in events where pitstops or hold times lead to thermal heat transfer from system metals which can negatively impact braking ability with other fluids.



Durability

The purity and product construction makes Halo P1 very durable. Lap after lap, Halo P1 can be relied upon to deliver the same results from the first lap to the last. Especially important in endurance conditions.



Halo P1
Technical Information

03



Halo by Orthene

Halo P1 technical data sheet

Halo P1 specialist racing brake fluid is developed for the highest level, and most demanding professional motor racing series.

Halo P1 is formulated using the purest form of methyl borate ester which gives the fluid an extremely high polarity and ensures low compressibility across a wide temperature range and delivers a more consistent pedal feel over an entire race distance.

PRODUCT	HALO P1
SPECIFICATION NO.	OSS 192
ISSUE NO.	3
DATE	January 2024

TEST REQUIRED	TYPICAL RESULTS	SPECIFICATION
Dry Equilibrium Reflux Boiling Point, °C	341°C, 646°F	338°C, 640°F Min.
Wet Equilibrium Reflux Boiling Point, °C	206°C, 403°F	200°C, 392°F Min
Kinematic Viscosity @ -40 °C, cSt	1400	-
Kinematic Viscosity @ 100 °C, cSt	2.63	1.5 cSt Min.
pH	6.60	-

NOTES

1. Halo P1 is for track use only
2. Borate Glycol ether ester formulation
3. Compatible with conventional and ABS brake systems

ISSUED BY

Dan Stafford, Chief Development Chemist, Motorsport
Additional technical data available on request: info@halobyorthene.com



Racing brake fluid comparison



CASTROL SRF



ENDLESS RF650



HALO P1

DRY BOILING POINT	325°C	328°C	341°C
MINUS -40°C VISCOSITY	1300 cSt	2400 cSt	1400 cSt
VISCOSITY @ 100°C	3.3 cSt	2.4 cSt	2.6 cSt
CHEMICAL BASE OF FLUID	Silicate ester	Borate Ester	Borate Ester
CHEMICAL BASE OF FLUID COMPATIBLE WITH BOSCH M5 ABS MODULE?	NO	YES	YES

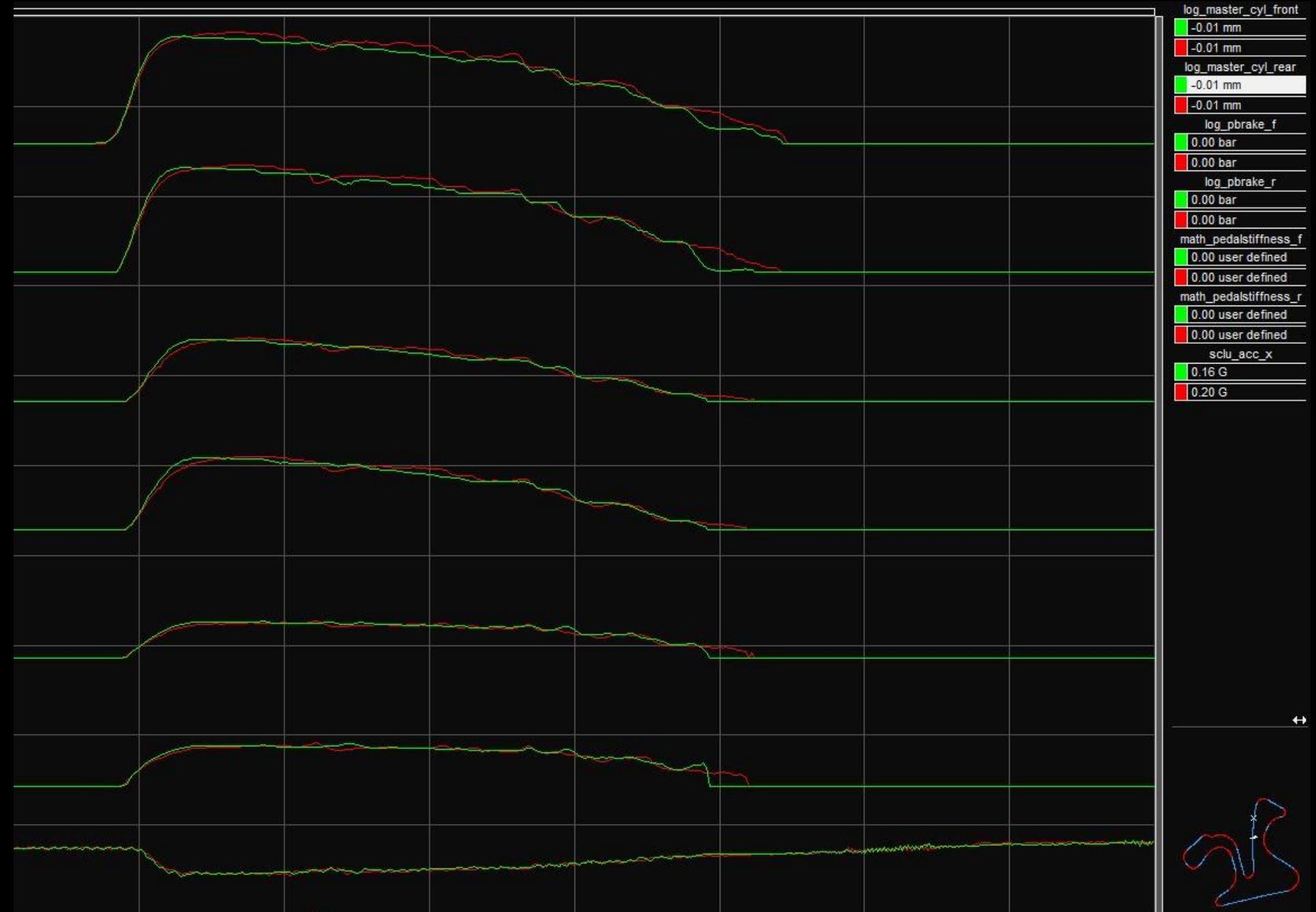


Test data

Testing data consistently shows Halo P1 consistency throughout the race distance

On-track testing data with a leading GT3 team shows Halo P1 endurance performance over a long run.

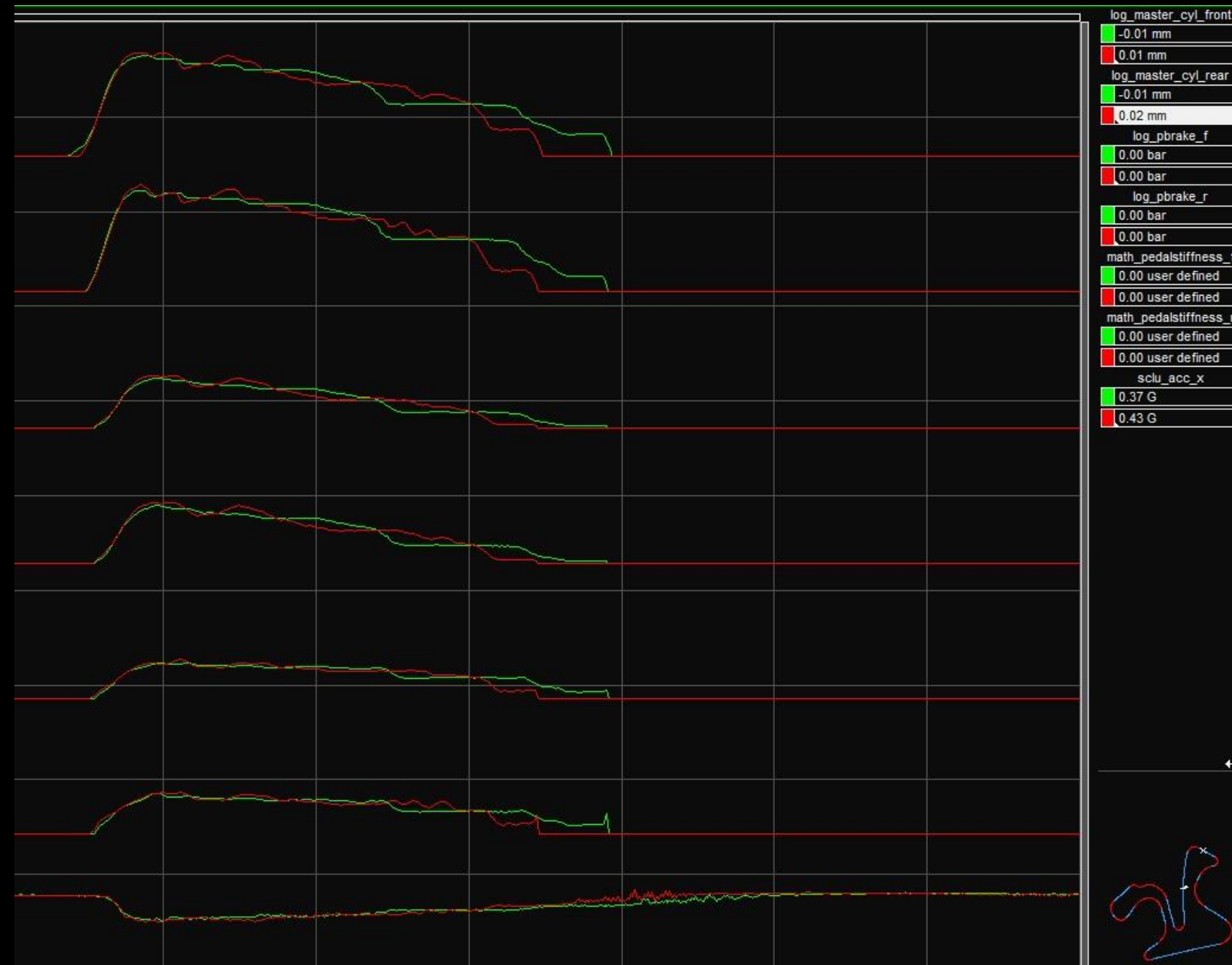
Lap 4 = red
Lap 34 = green



Test data

Testing data consistently shows Halo P1 consistency throughout the race distance

First braking zone after a four-minute pitstop including driver change.



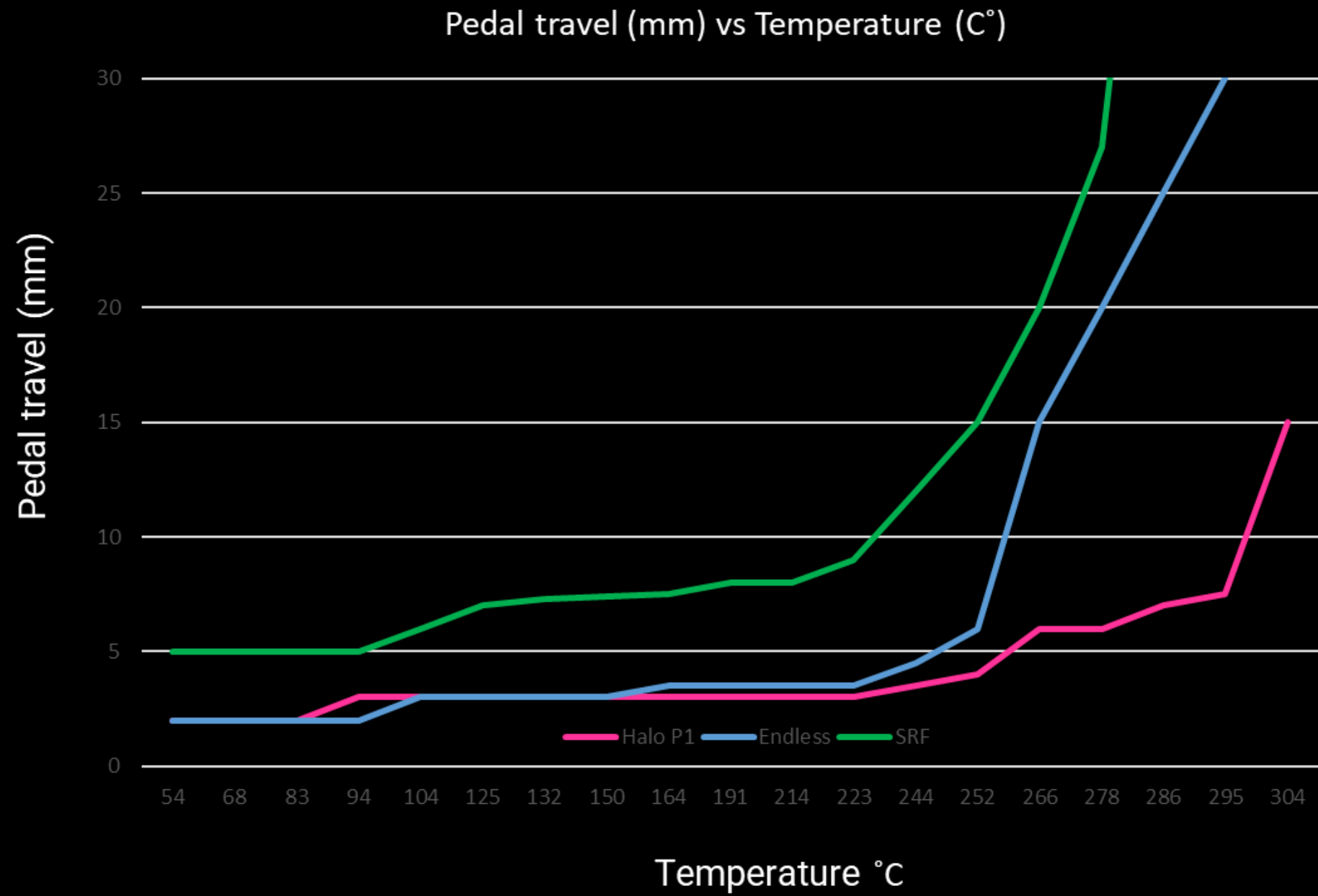
Comparison data

Compressibility between leading racing brake fluids

SRF underperforms vs. Halo P1 and Endless at all temperature ranges.

Halo P1 and Endless have excellent incompressibility through the main operating temperature windows.

Above 250°C, Halo P1 delivers a significant advantage to keep pedal travel for an extra 40-50°C.



Halo P1
Official Brake Fluid Supplier
Professional Racing Teams

04



Halo by Orthene



Flying Lizard Motorsports

Based out of Phoenix, Arizona, Flying Lizard Motorsports is one of the most iconic sports car teams in motorsports, having celebrated ten driver and team championships, as well as competed internationally at the 24 Hours of Le Mans eight times.

The team currently races in the Fanatec GT World Challenge America powered by AWS, GT America powered by AWS, Pirelli GT4 America, and Lamborghini Super Trofeo North America.





Through an extensive test program of back-to-back comparisons, we were extremely impressed with the Halo P1 fluid.

Orthene have developed a brake fluid that excels in every aspect. Braking performance is improved, the compressibility of this fluid at high temperatures provides a much harder pedal for the driver.

Braking distances stay consistent with minimal fade, which inspires confidence in the driver to keep pushing in extreme conditions.

DARREN LAW
CO-OWNER, FLYING LIZARD MOTORSPORTS
GT DRIVERS CHAMPION. DAYTONA 24-HOUR OVERALL
WINNER



GP Elite

GP Elite stands for ultimate enjoyment of cars and motorsports. This is not just about owning a performance or race car, but also in controlling it completely. GP Elite believes it is important that their drivers enjoy motorsports at the highest standard in a perfectly prepared car, following their step-by-step driver development program.

Their racing team, known as Team GP Elite, races in various Porsche Cups such as the Porsche Mobil 1 Supercup and also competes in various endurance races. With their in-house engineering team, they leave no stone unturned and go above and beyond in their drive to perfection.





Braking is a crucial part of going fast, and as we are always searching for ways to improve the car and lap times, brake fluid had to undergo testing.

We started testing with the big well-known brands and took this as a benchmark. When Halo P1 came across to us, we were very sceptical as we thought it could not be better. But we were wrong.

The brake pedal travel is less, the pedal feel is better (even when the brake pads are getting thinner), and after a pitstop we could proceed racing directly with the same pedal feel as before.

Halo P1 will make the difference if you want to get the best performance from your braking system, like no other brand can.

DENNIS BECUDE
HEAD OF ENGINEERING
GP ELITE





Power Maxed Racing

Formed in 2015, Power Maxed Racing are the Factory Vauxhall team in the British Touring Car Championship, alongside running cars in the Volkswagen Cup, VAG Trophy and Rallycross.

The team employ highly experienced staff, and build all of their race vehicles - from inception, through aerodynamic design to fabrication and development, all work is conducted in house.





We have worked with Orthene for many years and the service and Halo P1 is second to none.

We have been testing this product in the BTCC since before commercial launch, and our drivers have always commented how great the braking system and longevity is in our BTCC car during the races. We do not experience brake fade as we would using other known products in the marketplace, and the feel of the brake pedal is always good, this is in the main due to the superior compressibility of the fluid over a wide temperature range.

From a selfish perspective I was disappointed to hear that this fluid was now going to market as it will give our competitors the opportunity to have the same competitive advantage that we have had for some time, but now is the time to support our technical partner in talking about this revolutionary brake fluid.

MARTIN BROADHURST
TEAM MANAGER & TECHNICAL
DIRECTOR
POWER MAXED RACING



How to use Halo P1

Testing & switching fluid

05



Testing procedure and switching to Halo P1

Halo P1 offers the lowest compressibility and highest typical dry boiling point of any racing brake fluid available on the market today.



Recommended procedure

In order to perform a valid and reliable comparison test, we strongly recommend following this specific process.

Most racing brake fluids are based on a similar chemical structure (borate ester), so will be perfectly miscible with Halo P1. If it is not possible to follow the full process, a full brake system flush is recommended as a minimum. However, note that comparison results may not be scientifically valid.

Silicate ester fluids such as Castrol SRF are not miscible, and the full process should be followed.

01 Strip & rebuild

It is recommended that the brake system is stripped and rebuilt with new seals (calipers and master cylinders) between test sessions. This will eliminate any risk of residual fluid or worn / damaged seals disrupting the test.

02 Condition seals

Condition seals in Halo P1 racing brake fluid for 24 hours prior to reassembly and subject to a standard bedding-in procedure to ensure optimal performance

03 Race conditions

Comparison tests between Halo P1 and any other fluid should be conducted in race-prepared conditions.

Next, enjoy the results!