



ANTI-SCRATCH SOLUTIONS TO AUTOMOTIVE INTERIORS



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ANTI-SCRATCH ADDITIVE (SILICONE MASTERBATCH)

SILICONLUBE PP 306 - SILICONLUBE PP 306C

Scratch resistance for automotive interiors of different textures has been paid more and more attention by customers. Car manufactures (OEMs), such as VW and GM, have their strict standards for scratch resistance of interior surfaces. Thus to provide the interior appearances with comfort and good esthetic appeal is very important..

We can provide anti-scratch solutions to various PP/talc interior applications , including door panel, instrument panel, dashboard, center console, etc. With dosage from 0.5% to 3% of Siliconlube PP 306 or Siliconlube PP 306C, the scratch resistance of finished parts meets the standard of VW (PV3952), GM (GMW14688), Ford, etc.

TECHNOLOGIES

Grade		Siliconlube PP 306	Siliconlube PP 306C
Appearance		White Pellet	White Pellet
Silicone Content	%	50	50
Carrier resin		CO-PP	CO-PP
Recommended dosage	%	0.5~3	0.5~2.5

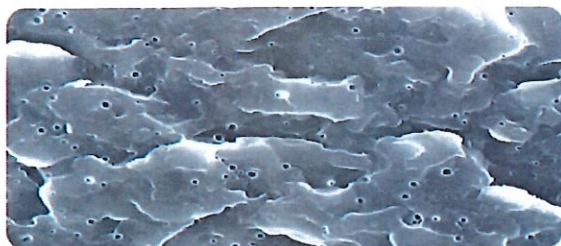


CHARACTERISTICS & BENEFITS

- Improved scratch and mar resistance
- Reduced dynamic coefficient of friction
- Excellent mold release
- Silk-like soft touch feel
- No tackiness on surface

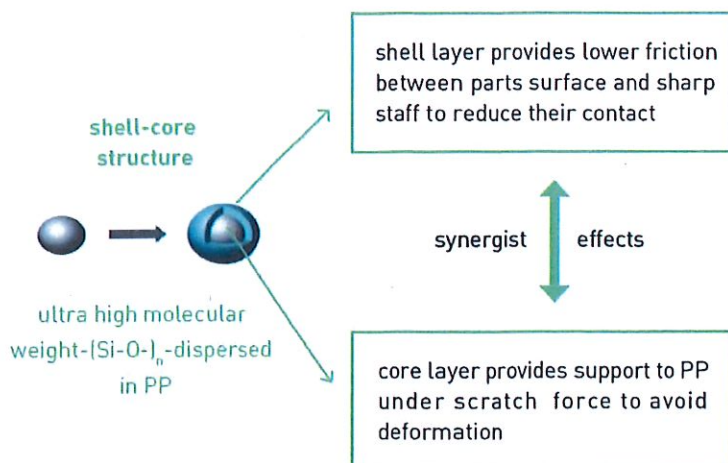
PRODUCT DESCRIPTION

SEM PHOTOGRAPH OF SILICONE DISPERSED IN RESINS



Silicone is evenly dispersed in plastic matrix in forms of small oil particles with a diameter of 1~2 μm during melt processing, which benefit in better processing and surface quality, such as improved melt flow, lower CoF, greater abrasion and scratch resistance.

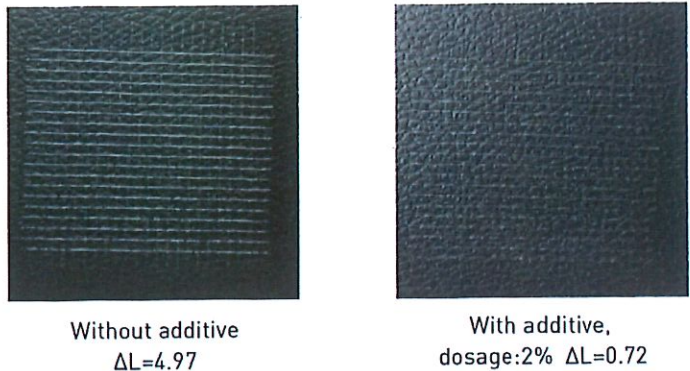
MECHANISM OF SILICONE MASTERBATCH 306/306C FOR SCRATCH RESISTANCE



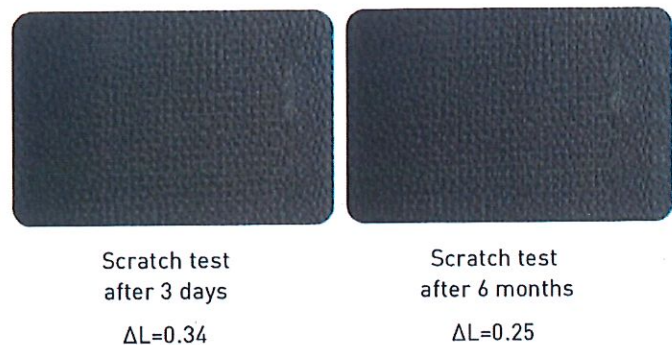
LONG-TERM EFFICIENT SCRATCH AND MAR RESISTANCE

Scratch tester: Erichen 430P
Basic formulation: PP+ 20% talc

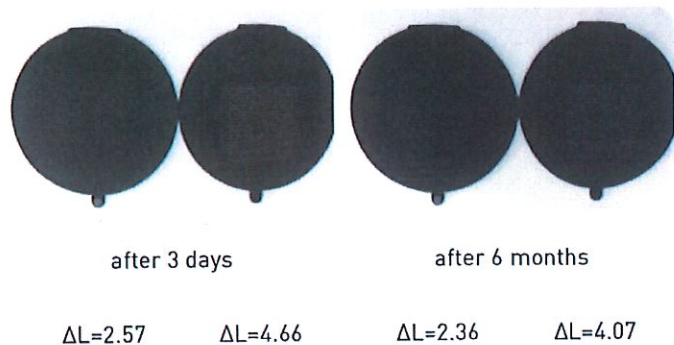
Comparison data available for other grains of VW, such as K8A, K85, K31, K3A, K29, etc.



Picture 1: Comparison photographs for scratch resistance in VW's grain K9A

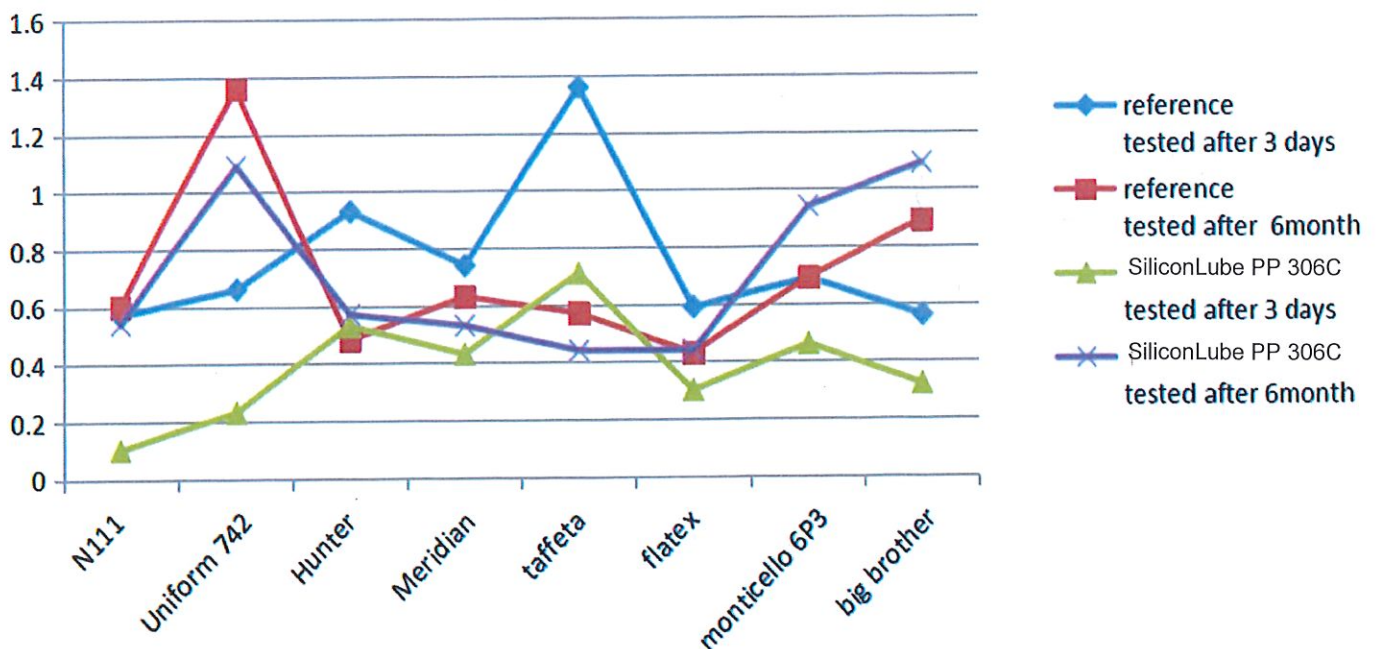


Pic.2: Siliconlube PP306C can provide long term scratch resistance performance.



Pic.3: Siliconlube PP306 performs better scratch resistance after 6 months than low molecular weight erucamide. Erucamide will migrate and result in much whiter scratch grinding.

Plaques left: PP+T20+2% SiliconLube PP 306C
Plaques right: PP+T20+1% Erucamide



Picture 4: scratch resistance performance comparison in GM's grains: a global silicone MB vs. SiliconLube PP 306C

After 6 months, GM GLD plaques with 306C has identical scratch resistance performance compared with that with reference silicone MB.

LOW VOC EMISSION



Aldehyde and Ketone Emissions:

TEST METHOD:

With reference to GMW 15635-2012, Sampling was performed by Flask Method, Followed with analysis using High Performance Liquid Chromatography.

SGS

Test Item(s)	Unit	Limit	MDL	001
Formaldehyde	$\mu\text{g} / \text{g}$	5	0.35	<0.1
Acetaldehyde	$\mu\text{g} / \text{g}$	0.5	0.35	<0.1
Acrolein	$\mu\text{g} / \text{g}$	0.5	0.35	<0.1
Acetone	$\mu\text{g} / \text{g}$	-	0.35	<0.1
Conclusion				PASS

NOTES:

(1) $\mu\text{g} / \text{g}$ = microgram per gram

(2) The maximum permissible limit is quoted from the PATAC ENGINEERING STANDARDS TS-INT-001-2015.

NO TACKINESS UNDER ARTIFICIAL ACCELERATED AGING TEST AND NATURAL WEATHERING EXPOSURE TEST



Reference +2% Siliconlube PP 306 +4% Siliconlube PP 306

NO MIGRATION
OR TACKINESS AFTER
5 CYCLES



Reference +2% Siliconlube PP 306C +4% Siliconlube PP 306C

XENON LIGHT EXPOSURE PV1306 (96hX5)