

Unique chemistry,
sustainable solutions

ELEMENTIS

Application leaflet

Talc in automotive coatings



Talc in automotive coatings

Automotive coatings are very complex multi-layer coating systems and there are many different alternative technologies available for the coatings of cars and other vehicles. In principle, automotive coatings can be divided in two categories: OEM (Original Equipment Manufacturing) and Car Refinishing. The plastic parts of cars are coated by special Plastic Coatings. Large vehicles, such as trucks, tractors and other agricultural machines, buses, train and public transport vehicles use coating system that are similar to refinish coatings. Special coatings are used for Under-Body Seals and then there are car Repair Putties.

Very typical coating system nowadays is four layers systems:

1. Primer – electro deposition primer, film thickness = 15-20 micron
2. Primer Surfacer, film thickness= 35-45 micron
3. Colour Base Coat, film thickness= 15-25 micron
4. Clear Coat, film thickness= 40 micron

The total dry film thickness is 90-120 micron. The development is going on to reduce the number of coatings, but still the four layers concept is in use. Sometimes primer surfacer and colour base coat are combined as one, but most commonly they are applied as different layers. Refinishing coatings the electro deposition coating is skipped because it is very difficult to apply in car repair shops. So refinishing coating system consists of primer surfacer, base coat and clear coat.



Function

Function of primers:

- Together with very thin pre-treatment layer to guarantee good corrosion resistance
- To generate good adhesion on pre-treated car body and next coating above
- Must have good rheological properties to have smooth coating layer with even film thickness on every part of car body. Must be suitable for the application technique used for primers (dipping or electro deposition)
- Nowadays also good weathering resistance is also required from primers
- Coloured normally to grey

Function of primer surfacer:

- Fills and smoothens all defects of car body surface after application of primer (e-coat)
- Gives good adhesion to primer and to basecoat
- Good corrosion resistance (good barrier properties and good weather resistance)
- Adsorbs mechanical impact on coating (stone chip resistance)
- Gives good sandability
- Gives smooth, even coating layer with good levelling
- Normally grey in colour, but nowadays they are coloured near to the colour of base coat to support good hiding powder and bright colours of base coat.

Function of base coat (top /colour coat):

- Gives desired colour, appearance, smoothness of surface and gloss
- Gives good resistance to weathering, acids, solvents, chemicals and mechanical impact

Function of clear coat:

- Gives smoothness, appearance, hardness and gloss
- Protects base coats against weathering, chemicals, solvents and mechanical impacts (stone chips and scratches)



Usage

Talc is used in two first layers, so in primers and primer surfacer. The talc is used also in Refinishing Coatings and Under Body Seals. The talc usages/potential in different layers is expressed below.

Primers

- Finntalc M05N
- Percentage in formulation= 5-15 w%; in most of the cases = 6-9 w%
- Primers are coloured to grey, so high whiteness of talc is not needed, but good hiding power
- Talc must be pure and platy to give good corrosion resistance and barrier properties. The talc plays also a role to give suitable viscosity behaviour

Primer surfacer

- Finnatalc M15; for low VOC option Finntalc D30E
- Percentage in formulations= 5-15 w%; most common dosage= 8-12 %
- Talc gives good barrier properties, corrosion resistance and sandability
- No high whiteness talc is needed because primers are either grey or coloured to colour close to the colour of base coat

Refinishing

- Finntalc M15 talc is used
- Percentage in formulation= 5-15 w%; most common dosage= 8-12 w%
- Same requirements as for talc in primer surfacer

Under body seals

- Finntalc M30LV/M40LV; M40LV is de-dusted version of M30LV=> lowered oil absorption
- Thick layers, colour is not important
- Good resistance to corrosion, good filling properties, good adhesion and stone chips are required
- Percentage of talc in formulation= 15-20 w%

NOTE:

The information herein is currently believed to be accurate. We do not guarantee its accuracy. Purchasers shall not rely on statements herein when purchasing any products. Purchasers should make their own investigations to determine if such products are suitable for a particular use. The products discussed are sold without warranty, express or implied, including a warranty of merchantability and fitness for use. Purchasers will be subject to a separate agreement which will not incorporate this document.

© Copyright 2020, Elementis Specialties, Inc.

All rights reserved. Copying and/or downloading of this document or information therein for republication is not allowed unless prior written agreement is obtained from Elementis Specialties, Inc.

® Registered trademark of Elementis SRL, Inc.
April 2020

For more details
please contact:

North America
Elementis
469 Old Trenton Road
East Windsor
NJ 08512, USA
T +1 609 443 2500

www.elementis.com

Europe
Elementis UK Ltd
c/o Elementis GmbH
Stolberger Strasse 370
50933 Cologne, Germany
T +49 221 2923 2066

Asia
Deuchem (Shanghai)
Chemical Co., Ltd.
99, Lianyang Road
Songjiang Industrial Zone
Shanghai, China 201613
T +86 21 577 40348