

Product data

Synolite 5241-U-1

Chemical/physical nature

Synolite 5241-U-1 is an unsaturated polyester based on DCPD, dissolved in styrene. The resin is pre-accelerated with polymeric amines, has a medium viscosity, and a medium reactivity.

Major applications

Synolite 5241-U-1 yields highly flexible polymers. The resin is applied for highly filled knifing fillers, especially for use with stoving coating systems. In addition, Synolite 5241-U-1 is ideal for use as the sole binder for wood repair fillers. This resin is cold-curing, even around 0°C.

Principal properties

Synolite 5241-U-1 is ideal for use as the sole binder in overbaking-resistant fillers. They retain their high flexibility and adhesion at temperatures up to 170°C. In car body fillers, Synolite 5241-U-1 is applied as the flexible component in blends for soft sanding pastes in combination with, for example, Synolite 9248-U-3. Storage stability of putties made from Synolite 5241-U-1 is excellent. Fillers made from Synolite 5241-U-1 show very good adhesion to various substrates, including metal substrates, wood, and polyester.

Product specifications

| Specification | Range | Unit | TM |
|-----------------------------|-----------------|---------------|------|
| Appearance | clear | - | 2265 |
| Colour | max. 10 | G | 2017 |
| Refractive index (23 °C) | 1.5235 - 1.5255 | - | 2150 |
| Acid value, as such | 12 - 18 | mg KOH/g Pa.s | 2401 |
| Viscosity, 23°C | 0.81- 1.09 | | 2013 |
| Solids content, IR | 69.5 - 72.5 | % | 2033 |
| Gel time from 25 to 35°C | 8.0 - 12.0 | Min | 2625 |
| Cure time from 25°C to peak | 12.0 - 19.0 | Min | 2625 |
| Peak temperature | 70 - 95 | °C | 2625 |
| Gel time, physical | 6.8 - 10.2 | Min | 2625 |

Remarks

The curing characteristics are obtained using 2 wt% BPO-50% Lucidol CH50L (AKZO Nobel).

Properties of the liquid resin (typical values)

| Property | Value | Unit | TM |
|---------------------------------|------------|-------------------|------|
| Flash point | appr. 33 | °C | 2800 |
| Density, 23°C | appr. 1100 | kg/m ³ | 2160 |
| Stability, no init., dark, 25°C | min. 6 | Month | - |

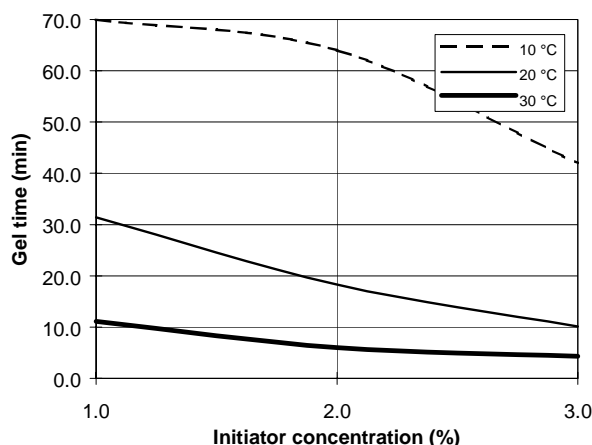
Properties of cast unfilled resin (typical values)

| Property | Value | Unit | TM |
|---------------------|-------|---------|-----------|
| Tensile strength | 5 | MPa | ISO 527-2 |
| Elongation at break | 70 | % | ISO 527-2 |
| Hardness | 35 | Shore D | 2602 |

Curing conditions & remarks

Casting (4 mm) cured with 2 wt% Lucidol CH50L (AKZO Nobel). Postcure 6h at 60°C.

Graph showing pot life with a standard catalytic system



Remarks

Gel time of 100 g resin, using BPO-50% Lucidol CH50L (AKZO Nobel).

Formulation

Suitable extenders are talc, dolomite/calcite, crystalline chalk and barytes with a low iron content. Talc is applied as the main component because it improves sanding properties, and the adhesion to the substrate. In addition, the more spherical extenders such as dolomite, chalk and barites ensure dense packing.

Typical starting formulation

| Components | Weight |
|-------------------------|--------|
| Synolite 5241-U-1 | 150 |
| Synolite 9248-U-3 | 150 |
| Thixcin E (a) | 10 |
| Finntalc M50 (b) | 475 |
| Titanium dioxide (c) | 50 |
| Barium sulphate EWO (d) | 140 |
| Styrene monomer | 25 |
| | 1000 |

Remarks

a) Elementis Specialties, b) Mondo Minerals, c) Kronos Europe d) Sachtleben.
Putty geltime at 20°C with 2 wt% BPO-50% paste (AKZO Nobel Lucidol BT-50): 4-5 minutes.

Processing

This putty resin cures by the addition of benzoyl peroxide (BPO), without the application of external heat.

For car repair putties, the following blend of resins is recommended for soft sanding:

Synolite 5241-U-1 50 parts by weight
Synolite 9248-U-3 50 pbw

Guidelines before use

Before use, the resin should be conditioned at a well defined, application dependant temperature (usually 15 °C minimum for a MEKP / Co cure). Stir the product before blending.

Storage guidelines

The resin should be stored indoors in the original, unopened and undamaged packaging, in a dry place at temperatures between 5°C and 30°C. Shelf life is reduced at higher temperatures. The shelf life of styrene containing unsaturated polyesters will be significantly reduced when exposed to light. Store in dark and in 100% light tight containers only.

With DCPD resins there is a tendency for skin formation if exposed to air. Whilst products are formulated to reduce this characteristic, exposure to air and ventilation in bulk storage facilities should be minimised.

Material Safety

A Material Safety Data Sheet of this product is available on request.

Test methods

Test methods referred to in the table(s) are available on request.



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