



TECHNICAL DATA SHEET

Resin 6482X

Resin 6482X is a reactive silicone resin developed for use in the manufacture of decorative medium temperature paints.

This resin is mainly utilised for the manufacture of air drying, temperature resistant silicone alkyd paints. It is also more compatible than other silicone with urea-formaldehyde, melamine-formaldehyde, epoxy, polyurethane and acrylic resins.

Another use is as a surfactant for epoxy-phenolic varnishes and polyester, polyurethane and epoxy paints. It also improves weathering resistance.

Characteristic

Chemical nature	Methylphenyl silicone resin
Appearance	Clear to very slightly cloudy liquid.
Colour	Colourless to slightly yellow
Dry content % approx	60
Solvent	Xylene
Flash point °C. (closed Cup) approx	28
Density at 25°C. approx	1.06
Viscosity at 25°C, mm ² /s, approx	15 Hydroxyl content, % by weight, approx. 3.5 to 4.0 compared to the dry product
Thinners	Aromatic and chlorinated Hydrocarbons, esters, ketones, glycol ethers and their esters.

Processing

Resin 6482 X can be used simply by mixing, cold with alkyd resins (mainly coconut oil, desiccated castor oil and linseed, oil-based) for the manufacture of industrial paints.

As a general rule, a Resin 6482X content of 20 to 30 % is used, but this figure may be as high as 75 %.

As an additive, the quantity used is between 1 and 5 % of the paint.

Packaging

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Information given in this publication is based upon technical data gained in our own and other Laboratories and is believed to be true. However if the material is used in conditions beyond our control we can assume no liability for results obtained or damages incurred through the application of the data present herein.

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RESIN 6482X

Resin 6482X is supplied in 25 and 200 Kg drums.

Storage

Resin 6482X can be kept for 12 months, in the original unopened container, at a temperature between 5 and 25°C.

The paint should not be kept in lead-soldered containers, as this might cause gelation of the product.

Health And Safety

Resin 6482X is supplied as dilute solution in Xylene. The following precautions should therefore be taken when handling it :

Work in well ventilated areas, away from any risk of fire. Do not ingest, and avoid prolonged or repeated contact with the skin and contact with the eyes.

Additional Information

A phenyl silicone resin which produces a hard film and is intended mainly for blending with organic resins, the majority of which it is compatible with. It imparts the normal qualities of heat resistance and improved weathering to aluminium, white and coloured finishes. When included at 25 - 50% of total vehicle solids it upgrades the heat resistance of organic blends significantly. Smaller amounts, (say, from 2 - 10%) improve the weathering, flow and gloss properties of organic paints.

Resin 6482X is very compatible with alkyds, urea-formaldehyde resins, melamine-formaldehyde resins, chlorinated dephenyls, ethyl cellulose and acrylic resins and shows good compatibility with selected phenolic resins; and low-molecular-weight epoxy resins. Its compatibility with most polyester resins is limited and nitrocellulose will tolerate little more than 5% of Resin 6482X.

Curing

To develop maximum hardness and resistance characteristics most silicone resin-based coatings should be baked at temperatures above 200°C and preferably above 230°C. Silicone Resin 6482X requires the higher range.

The lower temperature range will permit handling, but such undercured films are dependent on further heating during service to give maximum surface properties. Blends of silicone resins with organic resins will cure at lower temperatures, the exact schedule being dependent on the silicone content and on the nature of the modifier.

The following times and temperature for the different classes of vehicles are indicative of the cures required to give best properties. The inclusion of catalyst tends to reduce the curing time rather than the temperature and besides increasing the hardness of the films, contributes to its heat stability.

60-74 min at 250-260°C (100% silicone resin vehicle with drier)

75-90 min at 230-250°C (100% silicone resin vehicle with drier)

30-60 min at 220-230°C (50-75% silicone resin vehicle with drier)

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30-60 min at 150-200°C (25-50% silicone resin vehicle with drier)

Where both time and temperature ranges are given, the shortest time at the lowest temperature will provide the minimum recommended cure, provided that further curing is anticipated during heat service. Obviously, the longer baking time, particularly at the higher temperature limit of the range, will yield hard, more mar-resistant films after the initial bake.

Pigmentation

Almost any colour can be produced but care should be taken to choose pigments that are heat-stable as well as chemically inert. Silicone resins are of low viscosity, they wet pigments easily and are readily dispersed by the usual techniques.

Primers

Primers based on silicone Resin 6482X or on blends of silicone Resin 6482X and organic resins, with corrosion-inhibitive pigments, may be used to some advantage in conjunction with silicone paints to improve corrosion resistance. Zinc chromate combined with red iron oxide may be used up to 250°C.

Compatibility With Selected Organic Resins

Organic resin	Type	Compatibility
"Epok" A 1020/50	Short oil-length dehydrated castor oil alkyd	up to at least 30%
Paralac 16 X	Short-medium oil-length linseed oil alkyd	Completely Compatible
Paralac 64 DX	Short-medium oil-length drying castor oil alkyd	Completely Compatible
Paralac 485 X	Short-medium non drying oil alkyd	Completely Compatible
"Scopol" 61 NX	Styrenated alkyd	Completely Compatible
"Scopol" 41 HM/75	Vinyl toluene alkyd	Completely Compatible
Beetle BE 644	Urea-formaldehyde	Completely Compatible
Beetle BE 615	Melamine formaldehyde	Completely Compatible
Bedacryl 122X	Polymethacrylic ester	Completely Compatible
Vinalak 5920	Polybutylmethacrylate solution	Up to at least 20%
Wresinite R 416	Rosin maleic anhydride	Up to at least 20%
Daltolac 1300	Polyester	Up to at least 20%
Epikote 828	Epoxy	Up to at least 20%
Epikote 834	Epoxy	Up to at least 6%
Epikote 1001	Epoxy	Incompatible
Scopon 1130X	Styrenated epoxy resin ester	Up to at least 25%
Synolac	40% dehydrated castor oil epoxy resin ester	Completely compatible
Synflag 1512	Long linseed oil-length epoxy resin ester	Up to at least 30%