

Chemglaze® V-Line Polyurethane Coatings

Description

Chemglaze® V-line coatings are moisture-curing, aliphatic polyurethane coatings designed for product finishing applications on polyvinyl-chloride (PVC) and other plastics where maximum abrasion resistance, wear and flexibility properties are needed. Chemglaze V-Line coatings can also be used as protective coatings for vinyl, Mylar®, ABS, FRP, and Noryl®.

Features and Benefits

Versatile – provides excellent flexibility range and are usable on many plastic substrates. Durable high gloss finish can be adjusted to semigloss or lusterless by adding Chemglaze V175 flattening concentrate.

Excellent Adhesion – provides superior adhesion to many plastics.

*Mylar is a trademark of DuPont Teijin Films.
Noryl is a trademark of SABIC Innovative Plastics.*

Durable – provides excellent resistance to impact and abrasion; exhibit low Taber weight loss values.

Environmentally Resistant – provides excellent resistance to corrosion; provide extremely light stable and long-term weathering resistance properties.

Chemically Resistant – cures to a hard surface that is resistant to many chemicals, stains and solvents.

Easy to Clean – produces urethane top-coated substrates that are more easily cleaned and maintained than the uncoated product.

Application

Surface Preparation – Thoroughly clean surfaces to remove all dust, oil and grease. Before coating substrates, apply test patches of Chemglaze V-Line coating to determine if adhesion is adequate, or scuff sanding or using a primer will be required. Contact your **SOCOMORE** representative for recommended primer required for your application.

Typical Properties*

	V022	V047	V209	V175**
Appearance	Clear Liquid	Clear Liquid	White Liquid	Clear Liquid
Viscosity, cps ASTM D 2196, Brookfield LVT Spindle 2, 30 rpm	75 - 200	1900 - 2500	200 - 700	200 - 600
Density ASTM D 1475				
kg/L	0.93 - 0.96	0.98 - 1.02	1.09	0.96 - 0.99
(lb/gal)	(7.75 - 8.05)	(8.21 - 8.51)	(9.1)	(8.02 - 8.32)
Solids Content by Weight, % ASTM D 2369 modified	31 - 35	56.5 - 62.5	47.5 - 51.5	18 - 22
Flash Point (Seta), °C (°F) ASTM D 3278, Closed Cup	25 (78)	26 (80)	20 (68)	32 (90)
Volatile Organic Content (VOC) ASTM D 3960				
g/L	590	390	546	728
(lb/gal)	(4.93)	(3.26)	(4.56)	(6.07)

*Data is typical and not to be used for specification purposes.

** Chemglaze V175 flattening concentrate must be mixed with Chemglaze V022, V047 or V209 coating before use.

SOCOMORE TECHNICAL DATA

Mixing – Before mixing Chemglaze V209 coating or V175 concentrate, scrape the container bottoms to loosen and reincorporate settled pigments. Mechanically stir or agitate containers until uniform in consistency. Catalyze, thin, or adjust gloss (if desired) of Chemglaze V-Line coating.

- **Catalyst**

A catalyst must be added to cure Chemglaze V-Line coatings. For faster cure at minimum room or elevated temperature, add Chemglaze 9995 co-reactant catalyst, 3-8% by weight (4-12 oz/gal). For longer working life, add Chemglaze 9986 or 9988 catalyst, 1-6% by weight (1-9 oz/gal). Thoroughly mix coating after addition of catalyst.

Working life is dependent on the amount of catalyst used, coating and solids content, solvent losses, ambient temperature, and relative humidity exposure. Working life of coating mixed with Chemglaze 9995 catalyst is 1-3 days. Working life of coating mixed with Chemglaze 9986 or 9988 catalyst is indefinite with stored in a moisture-free container.

- **Thinner/Additive**

Depending on application method, Chemglaze 9951 thinner or Chemglaze 9974 roller additive can be added to Chemglaze V-Line coating. Do not use solvents containing alcohol or glycol ether. Thoroughly mix coating after addition of thinner or additive.

- **Gloss Adjustment**

Chemglaze V022, V047 and V209 coatings will dry to a high gloss finish without coating modification. The gloss can be adjusted to a semigloss or lusterless finish by adding Chemglaze V175 flattening concentrate. To adjust the gloss to semigloss, add 30-50 parts Chemglaze V175 concentrate, by volume, to 100 parts high gloss coating. To adjust the gloss to lusterless, add equal parts, by volume, of Chemglaze V175 concentrate to the high gloss coating.

The resulting gloss appearance is affected by application method, drying conditions, and the amount of Chemglaze V175 concentrate used. Do not exceed 100 parts Chemglaze V175 concentrate to 100 parts high gloss coating, as coating performance will be impaired.

When Chemglaze V175 concentrate is added to the high gloss coating, the flattening concentrate must be catalyzed for proper cure. Select the Chemglaze catalyst which will best match curing conditions.

Thoroughly stir Chemglaze V175 concentrate before use and mechanically mix after adding to the high gloss coating. Failure to thoroughly mix will result in non-uniform gloss or film whitening.

Applying – Apply coating by spray, brush or roller application methods. Chemglaze V-Line coatings are best applied at 13-35°C (55-95°F), with substrate temperatures at least 2.8°C (5°F) above the dew point.

- **Spraying**

Apply coating using conventional or HVLP spray equipment. Dilute Chemglaze V-Line coating 5-25% by volume with Chemglaze 9951 thinner. Apply a light (tack) coat, followed by a full wet coat.

- **Brushing/Rolling**

For improved flow and air release, add Chemglaze 9974 additive to one gallon Chemglaze V-Line coating as indicated.

Clear Coating	15-30 ml (0.5-1.0 fl oz)
Pigmented Coating	44-60 ml (1.5-2.0 fl oz)

Depending on surface characteristics, optimum dry film thickness of coating should be 38.1-50.8 micron (1.5-2.0 mil). Dry film thicknesses above 50.8 micron (2 mil) in a single coating can cause bubbling. Coverage rate is 6.8-8.6 m²/L (275-350 ft²/gal).

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Curing – Chemglaze V-Line coatings cure by reacting with moisture in the air. Cure rate is dependent on the temperature, relative humidity and amount of air circulation needed to remove the solvent.

Under the acceptable curing conditions (see Temperature/Relative Humidity Graph), the coating will develop its ultimate properties in approximately 14 days. Lower temperatures and humidities will retard cure, while higher temperatures and humidities may cause bubbling.

Chemglaze V-Line coatings cure to a tack-free surface in 2-18 hours at room temperature, depending on the application thickness, catalyst level, and relative humidity. Faster handling times can be achieved by using one of the following cure cycles:

10-30 minutes @ 93-121°C (200-250°F)

2-5 minutes @ 121-149°C (250-300°F)

1-4 minutes @ 149-194°C (300-375°F)

Chemglaze V-Line coatings may be recoated after the first application within 2 hours minimum and 24 hours maximum at room temperature and good air circulation. Recoat time is dependent on temperature and humidity. High temperature and humidity promote fast cure while low temperature and humidity slow down the cure. For maximum intercoat adhesion, recoat within 24 hours.

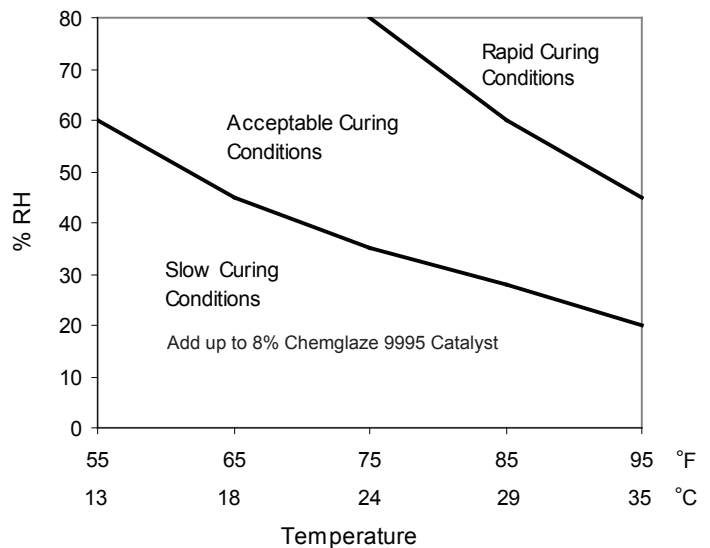
Cleanup – Use Chemglaze 9951 thinner, xylene, methyl ethyl ketone (MEK) or methyl isobutyl ketone (MIBK) to clean equipment before coating dries. Do not use lacquer thinners, water or solvents containing alcohols.

Typical Cured Properties*

	V022	V209
Tensile Strength, MPa	20.7	27.6
Elongation at Break, %	350	250

*Data is typical and not to be used for specification purposes.

Temperature/Relative Humidity Graph



SOCOMORE TECHNICAL DATA

Shelf Life/Storage

Shelf life is one year from date of shipment when stored at 10-32°C (50-90°F) in original, unopened container. Store indoors away from heat, sparks and open flames.

Cautionary Information

Before using this or any SOCOMORE product, refer to the Safety Data Sheet (SDS) and label for safe use and handling instructions.

For industrial/commercial use only. Must be applied by trained personnel only. Not to be used in household applications. Not for consumer use.

Limitations

- Not for immersion service. Do not apply to wet or damp substrates.
- Chemglaze V-Line coatings contain aliphatic isocyanate monomer. Spray only in properly ventilated areas with specified respiratory protection.
- Chemglaze V-Line coatings contain strong solvent and isocyanate or epoxy resins. Avoid breathing vapors and spray mists. Good ventilation is extremely important while using these products. Workers must be protected from inhalation of vapors/mists by using an air-supplied or chemical cartridge respirator or other engineering controls.

Values stated in this technical data sheet represent typical values as not all tests are run on each lot of material produced. For formalized product specifications for specific product end uses, contact SOCOMORE.

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