SERVICE MANUAL SECTION

PAINT AND REFINISHING

s16002, Formerly CTS-5139

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1. PAINT

1.1. CONTENT OF PAINT

The basic composition of automotive/truck paints is similar. They are all composed of one or more pigments, resins, solvents, and additives. The proportion and combination of components are selected to give the best durability, adhesion, flexibility, and polishing characteristics under varying circumstances. In some paint, tiny metallic flakes are added to give the finish eyecatching shades of the base color.

1.2. PIGMENT

Pigment is material in the paint that gives it color. The materials used as pigment have the ability to selectively reflect or absorb light. Color is the effect reflected light has on your eye.

The size and shape of pigment particles are important. Pigment particle size affects hiding ability, while pigment shape affects strength. Solid colors are made with large amounts of opaque pigments. Opaque pigments block the sunlight solidly and reflect light in a more direct manner. Basecoat/Clearcoat types of finishes use a high amount of metallic material and special pigments to create different colors and shades when viewed at different angles.

1.3. BINDER

Binder is the film former. It holds the pigment in liquid form, makes it durable, and gives it the ability to stick to the surface. It is the backbone of paint. The binder generally is made up of a synthetic resin.

1.4. SOLVENT

Solvent is the transfer medium. The solvent dissolves the binder and carries the pigment and binder through the spray gun to the surface being painted. Most solvents are derived from crude oil. When used with lacquer, the solvent is called a thinner. When used with enamel, it is referred to as a reducer.

1.5. ADDITIVES

Additives, which represent only a small part of the paint, may be designed to prevent wrinkling, speed curing, prevent blushing, or improve chemical resistance or gloss.

1.6. TYPES OF FINISHES

The finish of a vehicle has two basic functions: to protect the body from corrosion and improve the appearance. There are two basic types of finishes: lacquers and enamels (urethanes are a type of enamel). The difference between the two is how they dry and cure. Lacquers dry by the evaporation of solvents. Enamels and urethanes cure by solvent evaporation and by cross-linking the paint molecules. Finishes are applied in either single stage or two stage (as in basecoat/clearcoat) methods. International vehicles have the basecoat/clearcoat type of finish.

2. SAFETY

WARNING – Hazardous material can cause injury or death to a painter, as well as cause damage to property and pollute the soil, water, and air.

2.1. PERSONAL PROTECTION

When handling hazardous materials you need to know:

1. What the material is or what makes it hazardous.
2. The hazardous properties of the material.
3. The correct personal protection equipment needed for working with that material.
4. How to properly use the protection equipment.
5. How to determine the protection equipment is functioning properly.

Be sure to read the manufacturer's warning labels and instruction sheets. Ask for the Material Safety Data Sheets (MSDS) for further detailed hazard handling instructions.

3. PAINT REFINISHING

Paint repairs and refinishing can be done with acrylic or urethane enamels. Various manufacturers, including Sikkens, DuPont, PPG Industries and Sherwin-Williams, offer satisfactory materials for refinishing. The guidelines contained within this section have been prepared in cooperation with Sikkens. When other manufacturers' products are used, the user should make sure that they are equivalent products.

All warnings and instructions furnished by the manufacturers of the products you use must be closely followed. Observe all safety precautions on instruction labels for each paint product. Special care should be followed for proper respirators when using and spraying Isocyanate Hardeners and Activators.

These instructions are intended to provide general guidance in repair and refinishing of any original acrylic enamel or urethane finishes. For more detailed information relating to paint repairs and materials, refer to the paint manufacturer's service information and bulletins.

Prior to applying any type of cleaning solvent or sanding, it is important that the panel or complete vehicle (depending upon the type of painting operation) be cleaned with mild detergent and water. A good washing of the area to be refinished will remove normal road dirt such as tree sap, bird droppings, mud and normal dust.

3.1. NEW PANEL WORK

Aluminum or Steel

1. Wash panel with lacquer thinner.
2. Degrease the panel with Sikkens M600 Wax and Grease Remover. Use two cloths: the first with M600, the second dry, as a wipe on and wipe off process. Follow the directions listed in Sikkens Degreasers and Cleaners.
3. If the material is:
   a. Aluminum, sand with #150 - #180 grit paper dry. Wear an approved mask.
   b. Cold rolled steel, sand with #80 then #120 grit paper dry.
   c. Galvanized steel, sand with #120 grit paper dry
   d. Stainless steel, sand with #150 - #180 grit paper dry.

4. Remove dust by using compressed air.

> **WARNING – Failure to wear eye protection and a dust mask could result in personal injury or death.**

5. Degrease again using Sikkens M600 Wax and Grease Remover.

6. Mix 1 part Wash primer CR with 1 part Wash Hardener.

7. Apply mixed Wash Primer CR in one medium coat at 0.3 - 0.4 mils per pass. Specific application guidelines for spray gun tip and pressures can be found in Sikkens Washprimer CR. The wash primer should be applied at a minimum temperature of 60 degrees F and a maximum Rh of 75%.

8. Allow paint to flash off at ambient conditions for a minimum 15 minutes but no more than 8 hours at 70 degrees F.

9. Do not sand Wash Primer CR. If sanding becomes necessary, repeat Steps 3 - 8.

10. Mix 100 parts Autocryl Filler Off-White with 50 parts of Autocryl 1.2.3 Hardener and 40 parts Sikkens 1.2.3 Reducer according to the directions in Sikkens Autocryl Filler Off White.

11. Apply mixed Autocryl Filler Off-White following the instructions in the technical data sheet.

12. Allow to dry a minimum of 15 minutes at 70 degrees F. If longer than one hour, sanding is required to assure topcoat adhesion.

13. If sanding is required, use #360 - #410 grit paper dry or #500 - #600 grit wet. After sanding, degrease the surface with M600 wax and grease remover. Wear an approved dust mask.

14. To coat with Sikkens Autobase/Clearcoat System, follow the instructions in Sikkens Autobase Metallic-Autoclear System.

Fiberglass

1. Wash panel with lacquer A>Degrease the panel with Sikkens M600 Wax and Grease Remover. Use two cloths: the first with M600, the second dry, as a wipe on and wipe off process. Follow the direction listed in Sikkens Degreasers & Cleaners.

2. Scuff the entire panel with Scotch Brite 7447.

3. Remove dust by using compressed air.

> **WARNING – Failure to wear eye protection and a dust mask could result in personal injury or death.**

4. Degrease again using Sikkens M600 Wax and Grease Remover.

5. Mix 100 parts Autocryl Filler Off-White with 50 parts of Autocryl 1.2.3 Hardener and 40 parts Sikkens 1.2.3 Reducer according to the directions in Sikkens Autocryl Filler Off-White.

6. Apply mixed Autocryl Filler Off-White following the instructions in the technical data sheet.

7. Allow to dry a minimum of 15 minutes at 70 degrees F. If longer than one hour, sanding is required to assure topcoat adhesion.

8. If sanding is required, use #360 - #410 grit paper dry or #500 - #600 grit wet. After sanding, degrease the surface with M600 wax and grease remover. Wear an approved dust mask.

9. If the surface quality of the primed part is not acceptable due to pits or waviness, these defects may be repaired by using Sikkens Polykit, Polystop LP. Follow the directions in Sikkens Polystop LP. When the Polystop LP is cured, sand smooth with #240 - #320 grit paper dry and reprime the entire piece following steps 4 to 9 above. Wear an approved dust mask. The repaired area can be spot primed following the instructions in the Autocryl Filler Off White.

   If the appearance of the primed part is unacceptable for glass read through, thoroughly sand the entire surface with #360 - #400 grit paper dry or #500 - #600 grit paper wet. Wear an approved dust mask. Reprime the entire part following Steps 4 to 9 above.

10. Topcoat with Sikkens Autobase/Clearcoat System following the instructions in Sikkens Autobase Metallic-Autoclear System.

3.2. PANEL REPAIR

NOTE – When repairing collision damage, the extent of repair and the technique required will dictate whether complete panels must be replaced or whether spot repair procedures can be used. If the damage is limited to a single panel, and is not too severe, spot repair is the appropriate repair technique. Minor dents, scratches, and gouges can be repaired in this way.

Metal Riveted Panels

Refer to GROUP 16-CAB in CTS-5000 Master Service Manual for the procedure for repair of collision damage involving panel replacement. Particular care should be taken concerning the sealing of panel joints and the proper treatment of rivets. In the case of a repair involving a riveted panel, the following procedures should be followed before the panels are riveted together.

1. Wash panel and rivets with lacquer solvent.

2. Degrease the panel and rivets with Sikkens M600 Wax and Grease Remover. Use two cloths: the first with M600, the second dry, as a wipe on and wipe off process. Follow direction listed in Sikkens Degreasers & Cleaners.

3. If the material is:
   a. Aluminum, sand with #150 - #180 grit paper dry. Wear an approved mask.
   b. Cold rolled steel, sand sequentially with #80 then #120 grit paper dry.
   c. Galvanized steel, sand with #120 grit paper dry.
   d. Stainless steel, sand with #150 - #180 grit paper dry.

4. Remove dust by using compressed air.

WARNING – Failure to wear eye protection and a dust mask could result in personal injury or death.

5. Degrease again using Sikkens M600 Wax and Grease Remover.

6. Mix 100 parts Autocryl Filler Off-White with 50 parts of Autocryl 1.2.3 Hardener and 40 parts Sikkens 1.2.3 Reducer according to the directions in Sikkens Autocryl Filler Off-White.

7. Apply mixed Autocryl Filler Off-White following the instructions in the technical data sheet.

8. Allow to dry a minimum of 15 minutes at 70 degrees F. If longer than one hour, sanding is required to assure topcoat adhesion.

9. If sanding is required, use #360 - #410 grit paper dry or #500 - #600 grit wet. After sanding, degrease the surface with M600 wax and grease remover. Wear an approved dust mask.

10. Apply a 3/16 inch - 1/4 inch bead of sealer - Essex 55802/Essex 435.21 Primer or Lord Versilak 204/No. 4 Activator - to one surface on the centerline of the rivet holes.

11. Rivet panel in place and allow sealer to cure according to the manufacturers instructions.

12. Degrease the panel with Sikkens M600 Wax and Grease Remover. Use two cloths: the first with M600, the second dry, as a wipe on and wipe off process. Follow the direction listed in Sikkens Degreasers & Cleaners.

13. Mix 1 part Wash primer CR with 1 part Wash Hardener.

14. Apply mixed Wash Primer CR in one medium coat at 0.3 - 0.4 mils per pass. Specific application guidelines for spray gun tip and pressures can be found in Sikkens Washprimer CR. The wash primer should be applied at a minimum temperature of 60 degrees F and a maximum Rh of 75%. Be sure to thoroughly cover the rivet head and edges with Wash Primer CR.

15. Allow paint to flash off at ambient conditions for a minimum 15 minutes but no more than 8 hours at 70 degrees F.

16. Do not sand Wash Primer CR. If sanding becomes necessary, repeat Steps 14-15.

17. Mix 100 parts Autocryl Filler Off-White with 50 parts of Autocryl 1.2.3 Hardener and 40 parts Sikkens 1.2.3 Reducer according to the directions in Sikkens Autocryl Filler Off-White.

18. Apply mixed Autocryl Filler Off-White following the instructions in the technical data sheet.

19. Allow to dry a minimum of 15 minutes at 70 degrees F. If longer than one hour, sanding is required to assure topcoat adhesion.

20. If sanding is required, use #360 - #410 grit paper dry or #500 - #600 grit wet. After sanding, degrease the surface with M600 wax and grease remover. Wear an approved dust mask. DO NOT SAND RIVET HEADS.

21. Topcoat with Sikkens Autobase/Clearcoat System following the instructions in Sikkens Autobase Metallic-Autoclear System.

3.3. SPOT REPAIR

This procedure is for fiberglass and metal.

NOTE – This procedure is intended for the "minor" or non-panel replacement type of repairs such as dents, dings, and deep scratches on metal or plastic substrates. Prior to starting, all brackets and other components should be removed from the area to be repaired.

1. Wash panel with lacquer thinner.

2. Degrease the panel with Sikkens M600 Wax and Grease Remover. Use two cloths: the first with M600, the second dry, as a wipe on and wipe off process. Follow the direction listed in Sikkens Degreasers & Cleaners.

3. Sand area to be repaired with #60 - #80 grit paper Remove all old paint down to base material over an area approximately twice the size of the defect to be repaired. Wear an approved dust mask.

4. Feather the edges of the sanded area with sequentially finer grades of sand paper starting with #120 - #150. Wear an approved dust mask.

5. Use Sikkens Polykit, Polystop LP according to the instructions in Sikkens Polystop LP, to fill in the area to be repaired. Avoid overfilling the area and spread the material evenly out to the edges. Allow Polystop to cure completely.

6. Sand the filled area flat using a sander or sanding block by sequentially sanding with #60 - #80 grit paper dry to #180 - #220 grit paper dry until the area is smooth and level with the surrounding panel. Wear an approved dust mask.

7. If there are irregularities in the surface, repeat steps 5 and 6.

8. Use a random orbital sander or sanding block with #220 - #280 grit paper dry and sand the entire area. Wear an approved dust mask.

9. Degrease the panel with Sikkens M600 Wax and Grease Remover. Use two cloths: the first with M600, the second dry, as a wipe on and wipe off process. Follow the direction listed in Sikkens Degreasers & Cleaners.

10. Mix 1 part Wash Primer EM with 1 part Wash Hardener.

11. Apply mixed Wash Primer EM in one medium coat at 1 mil film thickness. Specific application guidelines for spray gun tip and pressures can be found in Sikkens Washprimer EM.

12. Allow paint to flash off at ambient conditions for 1 hour at 70 degrees F.

    NOTE – If the topcoat is Autonova or Autobase/Autonova Clear, the Wash Primer EM must first be recoated with Autonova Filler or Autonova Non-Sanding filler.

13. Mix 100 parts Autocryl Filler Off-White with 50 parts of Autocryl 1.2.3 Hardener and 40 parts Sikkens 1.2.3 Reducer according to the directions in Sikkens Autocryl Filler Off-White.

14. Apply mixed Autocryl Filler Off-White following the instructions in the technical data sheet.

15. Allow to dry a minimum of 15 minutes at 70 degrees F. If longer than one hour, sanding is required to assure topcoat adhesion.

16. If sanding is required, use #360 - #410 grit paper dry or #500 - #600 grit wet. After sanding, degrease the surface with M600 wax and grease remover. Wear an approved dust mask.

17. Topcoat with Sikkens Autobase/Clearcoat System following the instructions in Sikkens Autobase Metallic-AutoClear System.

4. FINISH MATCHING

The first thing a customer checks after a vehicle is refinished is its appearance. It is the appearance that generates the most complaints, so it is important that the repair is an acceptable match to the original finish.

The three main factors that affect appearance are: the color of the vehicle, surface texture, and the overall condition of the finish.

4.1. MATCHING COLOR

Color is described in three different terms: (1) Value, which describes a color's lightness or darkness; (2) Hue, which describes its tint or cast, i.e., a green can be more yellow or more blue; and (3) Chroma, which refers to a color's richness and intensity.

4.2. THE COLOR WHEEL

To explain the dimensions of color, a color wheel (Figure 1) is used to provide a reference point in terms of four colors: red, yellow, green, and blue.

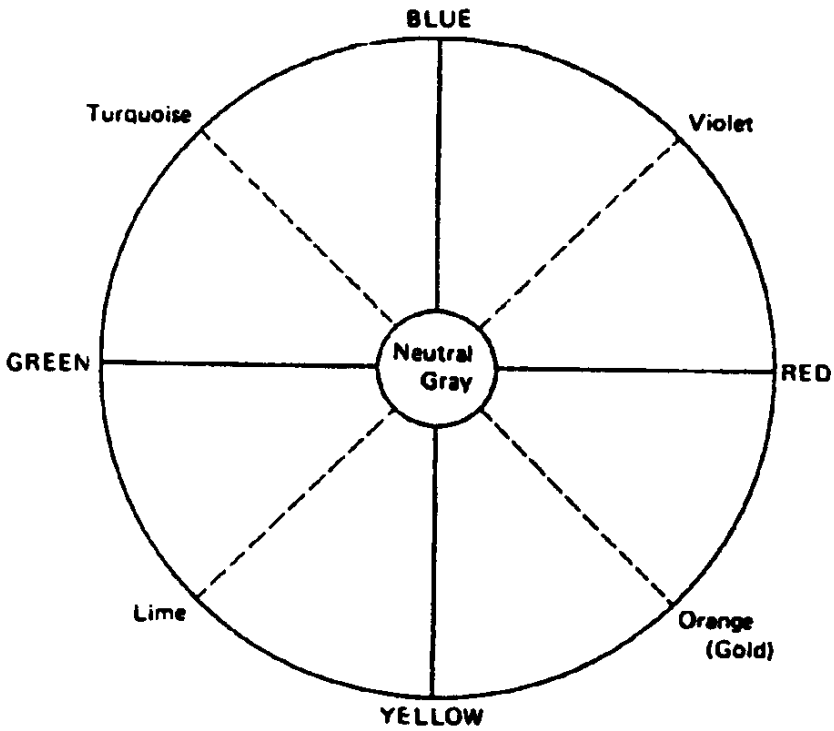

Figure 1 The Color Wheel

The Hue or cast is the easiest to see; is it redder, yellower, greener, or bluer? When matching colors, for example green, you must determine if it has a blue or yellow hue (Table 1). Once you establish a hue, a tint or toner can be added to change the primary color. Toners and tint can also be added to "kill" a hue (Table 2).

The center of the color wheel represents neutral gray; any color in its weakest concentration will become neutral or gray. As you move outward from the center, the color concentrates and becomes richer and pure; i.e., the greenest green, the bluest blue. This is chroma. Chroma is normally changed by either adding or subtracting the primary color's toner. Many painters make the mistake of adding black to darken a color when a darker toner of the primary color works better. The same is true to lighten a color; many times white is used when a lighter toner from the same color family should be used.

The brightness or Value is really the amount of white or black in a certain color. Adding black or white will in some circumstances change the color; for example, adding white to red will turn it a shade of pink.

Table 1 Color/Variations of Hue Table

Color	Variations of Hue
Green	Bluer or Yellower
Blue	Greener or Redder
Red	Bluer or Yellower
Yellow	Greener or Redder
Gold	Greener or Redder
Maroon	Yellower or Bluer

Table 1 Color/Variations of Hue Table (cont.)

Color	Variations of Hue
Bronze	Yellower or Redder
Orange	Yellower or Redder
White	Yellower or Bluer
Beige	Greener or Redder
Purple	Greener or Redder
Black	Yellower or Bluer
Aqua	Bluer or Greener
Gray	Yellower or Bluer

Table 2 Killing Hue Table

Color Being Matched	Adding	Kills	Subtracting
Blue			
Red	Blue	Kills	Yellow
Gold	Green	Kills	Red
Gold	Red	Kills	Green
Maroon	Yellow	Kills	Blue
Maroon	Blue	Kills	Yellow
Bronze	Yellow	Kills	Red
Bronze	Red	Kills	Yellow
Orange	Yellow	Kills	Red
Orange	Red	Kills	Yellow
Yellow	Green	Kills	Red
Yellow	Red	Kills	Green
White	Yellow	Kills	Blue
White	Blue	Kills	Yellow
Beige	Green	Kills	Red
Beige	Red	Kills	Green
Purple	Green	Kills	Red
Purple	Red	Kills	Green
Aqua	Blue	Kills	Green
Gray	Blue	Kills	Yellow
Gray	Yellow	Kills	Blue

4.3. TESTING THE COLOR

The basic method to test the color of paint is a test panel, creating two or three sections with different application techniques. Dry spray will cause the color to lighten, while a wet spray causes the color to darken.

With the test panel method, the paint is prepared as if you were going to spray the vehicle. Spray the test panel and allow correct flash time between coats. If it is a basecoat/clearcoat finish, apply a clearcoat at the proper time. Wait until the paint dries and check the match. Any large flat surface can be used to check the match. Refer to the color control guide (Table 3) for other factors which can be adjusted to control color.

Table 3 Color Control Guide Table

Variable		To Make Colors	
		Lighter	Darker
Shop Condition	Temperature	Increase	Decrease
	Humidity	Decrease	Increase
	Ventilation	Increase	Decrease
Spraying Techniques	Gun Distance	Increase distance	Decrease distance
	Gun Speed	Increase speed	Decrease speed
	Flash time between coats	Allow more flash time	Allow less flash time
	Mist Coat	(Will not lighten color)	Wetter mist coat
Spray Equipment and Adjustments	Fluid Tip	Use smaller size	Use larger size
	Air Cap	Use cap with more holes	Use cap with less holes
	Fluid Adjustment Valve	Decrease material flow	Increase material flow
	Fan Adjustment Valve	Increase fan width	Decrease fan width
	Air pressure (at gun)	Increase air pressure	Decrease air pressure
Thinner Usage	Type Thinner	Use faster-evaporating thinner	Use slower-evaporating thinner
	Reduction of color	Increase amount of thinner	Decrease amount of thinner
	Use of retarder	(Do not use retarder)	Add retarder to thinner

4.4. BLENDING THE COLOR

Blending is used to create the illusion that the surface is only one color. To accomplish this the color should be stepped - out in different coats. This allows the original finish to blend with the repaired area (Figure 2). Each paint manufacturer has its own specific recommendations for blending.

NOTE – When blending Basecoat/Clearcoat finishes you must also blend the clearcoat. Keep in mind that clearcoat can affect color.

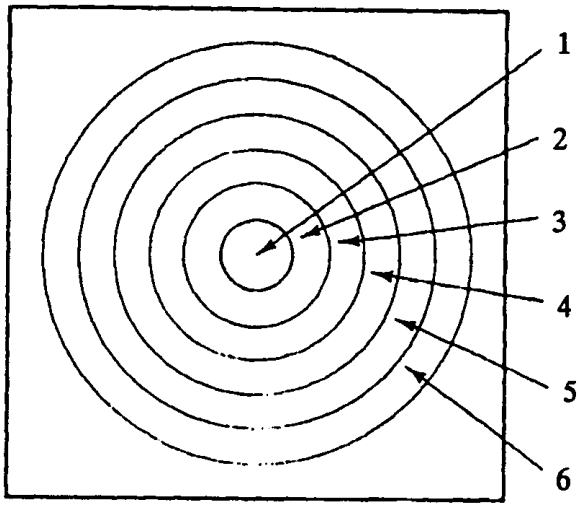

Figure 2 Blending With Step Out Pattern

1. ORIGINAL REPAIR
2. FIRST COAT
3. SECOND COAT
4. THIRD COAT
5. FOURTH COAT
6. MIST COAT

5. PAINT PROBLEMS

5.1. APPLICATION PROBLEMS

The most common application problems are:

Blushing

This term applies to the milky haze or mist that appears in a paint finish. It is usually caused by the trapping of moisture droplets in the paint on wet or humid days. Blushing can be avoided by using a slow drying thinner or by lowering the gun air pressure slightly. Most blushing can be spotted during painting. To correct the problem, add retarder to the paint mixture and respray. If blushing is spotted after painting, sand to eliminate it and recoat.

Dirt in Finish

Dirt can be blown into the paint very easily when the painting work area and vehicle are not properly cleaned before painting. If dirt does get into the finish, it should be rubbed out with a rubbing compound or sanded out if the dirt is deep in the finish.

Fisheye

A very common problem for all painters, fisheyes are the "holes" in the paint film which allow the underlying finish to be seen. Normally this problem is due to the incorrect cleaning of the surface and the presence of wax silicones. If the paint starts to fisheye while painting, either clean the paint off while wet and thoroughly clean the surface with a wax and grease remover, or, after the paint coat has set up, apply another coat containing the recommended amount of "fisheye eliminator" available from most paint manufacturers.

Mottling

This problem is characterized by a spotty or streaked appearance in a metallic paint finish. Mottling is caused by the metal flakes floating together after application due to inadequate mixing, excess solvent, or by holding the gun too close to the paint surface during spraying. If mottling occurs, allow the paint to set up and then apply a drier coat, or increase the distance of the gun to the paint surface. Badly mottled finishes may need to be sanded down and repainted.

Orange Peel

Orange peel has the appearance of a bumpy surface, much like the skin of an orange. It is caused by improper paint flow to the wrong spray technique or air/paint mixture, high air temperature, too little solvent in the paint, or poorly mixed paint. Orange peel can be prevented by adjusting the solvent mix to compensate for high temperature or rapid drying time and by adjusting the air mixture and spray pattern. In extreme cases, paint may need to be sanded and resprayed.

Pinholing

Tiny holes may appear in a finish due to several different reasons such as applying paint over a moist surface, contaminants in paint or air lines, improper sealing of primer or plastic filler/putty areas, excessively heavy or wet paint coats, or poor spray technique, all of which tend to trap moisture or solvent under the paint finish. Review painting conditions and techniques if pinholing occurs during painting. Severe cases should be sanded down and repainted.

Runs and Sags

Often caused by applying too much paint at once, runs and sags may also appear when the paint contains too much solvent, when the air/paint mixture of the gun is incorrect, or when the gun is held too close to the paint surface. Runs and sags must be sanded out and the surface refinished.

Streaking

Seen as a zebra-like effect, streaking is caused by tilting the spray gun during paint application instead of keeping the gun parallel to the surface. Mild streaking can be blended into additional cover coats, but heavy streaking requires sanding and compounding and sometimes repainting.

Wrinkling

This condition is caused by unequal drying of the paint finish, usually due to excessively thick or solvent heavy paint coats, varying temperatures during paint application, or too many paint coats. Wrinkled paint must be removed and the surface repainted.

5.2. PAINT FLAWS

The following list is a guide to most of the common flaws you are likely to encounter before painting a vehicle:

Bleeding

Commonly seen in instances where a light color is painted over a darker color, especially reds or maroons. Bleeding refers to the showing through of the original paint or primer into the new finish coat. Bleeding is caused by the solvent penetration of the new paint into the old finish, usually because the old finish has not been properly sealed. To remove areas of bleeding, sand off the new finish, apply surface sealer, and recoat; or, allow the new finish to properly cure, apply surface sealer, and then recoat.

Blistering

This problem can show up immediately or often months after the paint has been applied. Blistering appears as bubbles in the finish, caused by pockets of air or moisture trapped under the paint. As the paint continues to cure over a period of time, these pockets expand and form blisters. Common causes of blistering are improperly cleaned or dried surfaces, improper solvent mixing, a too thick application of paint coats with not enough drying time between coats, and water or impurities in the air lines. Blistering can be repaired by sanding and refinishing.

Chalking

A fine white powdery condition at the surface of lighter colors and distinctly bronze colored appearance on dark reds and blues. Almost invariably these conditions are confined to old paint films which have weathered for several years. Collapse of the paint film binder results from prolonged exposure to light and weathering. Regular maintenance will delay the occurrence of this problem but once breakdown has started, the only effective cure is complete removal of the paint film and then refinish.

Cracking and Checking

Often found in clear cover coats, cracking and checking are usually caused by abrupt changes in temperature and humidity, excessively heavy paint coats, incompatibility of paint products, poorly mixed (weak) paint and poorly prepped paint surfaces. Careful adherence to proper paint techniques should prevent cracking and checking. If they do occur, sand down affected area and repaint.

Crazing

This condition can be identified by the appearance of fine, irregular splits and cracks that completely cover an area. Crazing is, in effect, a shattering of the original finish, usually caused by the chemical action of the solvent on a cold paint surface. It can be overcome by either using fast drying thinner to minimize solvent penetration, or by applying very wet (solvent heavy) paint coats to penetrate the old paint. This should melt the craze pattern and blend the new and old paint together (in lacquer systems only).

Peeling and Chipping

Poor adhesion of paint to surface can result in peeling and chipping. This condition usually occurs because the surface was not thoroughly cleaned or sealed, or the paint was not properly mixed. When peeling and chipping appear, remove the fresh paint and reclean the surface before repainting.

Popping

Appearing much like blisters, popping is caused when solvents are trapped under the top coat. Solvents can be trapped by particles of dirt on the paint surface, improper paint/solvent mixture or insufficient drying time between coats. In mild cases, the blisters can be sanded out after the paint dries and then refinished. In vere cases, the entire finish must be removed and repainted.

Sand Scratches

This condition appears as scratches showing through the finish coat. Improper surface preparation or sealing is the cause. Affected areas should be sanded down and sealed before repainting.

Shrinking

This usually occurs in an area that has been repaired with plastic filler or body putty. The paint will sometimes separate from the repaired area due to the shrinking of the putty as it dries after repainting. If this happens, the affected area should be sanded down to bare metal and the putty or plastic reapplied in thin coats. Seal and repaint.

Water Spots

Much like the spots that appear on dishes when left to self-dry, water spots are caused by exposing a paint job to water before the paint is completely dry. Spots can be removed by compounding or polishing. In severe cases, sanding and refinishing is needed.

5.3. GRILLE AND EMBLEM PAINT

If paint used on the grille and emblems tends to peel or chip, the following repair procedure should be followed:

For grilles, clean off the old paint, wash with lacquer solvent, prime with Sikkens Autocryl Filler Off-White, and then topcoat with Sikkens Rallye Black. Use heat lamps if available; if not, air dry and use three light coats of paint.

For emblems, etching with muratic acid where paint is to be applied will help adhesion but it must be done with care. Observe all safety procedures outlined in the instructions supplied with each one of these products.

6. ORIGINAL FINISH RESTORATION

In many cases repair of the finish does not have to include repainting. To reduce customer complaints, original finish and final detailing may be necessary. The four main steps to finish restoration are filing and sanding, buffing, polishing, and protecting the finish.

Before any finish restoration, wash the vehicle to remove foreign material.

6.1. FILING AND SANDING

Filing and sanding removes dirt nibs, runs, and sags. A file, sanding stone, or block should be used to remove the defect. Normally, using sandpaper to remove a defect causes the area to crown. This means that the paint surface around the defect wears away before the defect. Using a file, stone, or block, the defect can be removed without excessive damage to the surrounding paint. To make a dirt nib file, refer to Figure 3.

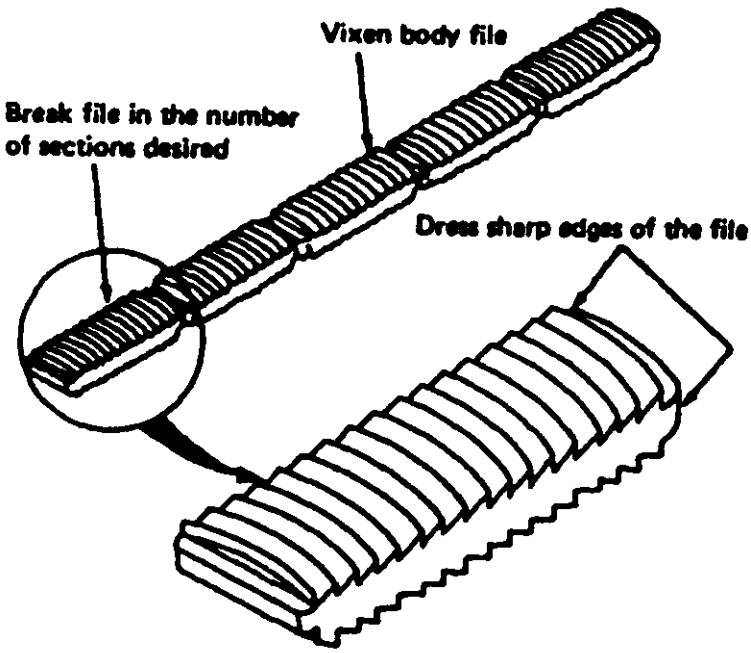

Figure 3 Making a Dirt Nib File

When sanding Basecoat/Clearcoat paint finish, grits coarser than 1500 should not be used.

WARNING – Failure to wear eye protection and an approved mask for sanding, buffing and machine polishing could result in personal injury.

6.2. BUFFING

To remove sand scratches, slight imperfections, and light scratches, buffing or rubbing compound is used. Rubbing compound can also be used to restore gloss and smoothness in a blended area. Rubbing compounds contain an abrasive mixed in oils, water, and solvents. There are different formulas and degrees of abrasiveness for hand or machine application. Small areas should be done by hand, while large areas can be done by machine.

6.3. POLISHING

To restore gloss and remove swirl marks, polishing compounds are used. These are formulated for hand and machine application. Polishing compounds seldom contain course abrasives, however caution should be exercised when machine polishing so as to not damage the finish from heat build-up.

6.4. PROTECTING

Most finishes are protected by applying a wax coat. Care should be taken to select a product that is compatible with the finish.

6.5. REMOVING MEDIUM TO HEAVY OXIDATION

Older vehicles that were painted with earlier paint techniques such as lacquers, enamels, and acrylics are all vulnerable to finish oxidation. This oxidation appears as the finish color on the polishing cloth when the vehicle is waxed. Urethane Basecoat/Clearcoat finishes have resolved this issue.The five steps to remove oxidation are:

1. Wash vehicle with a high quality wash and conditioner (such as Meguiars #62). Follow the manufacturers instructions to wash all painted surfaces.

2. Apply Meguiars #15 Clear Coat Conditioner to the area to be buffed, and smear material evenly with pad before starting buffer. Start the buffer (recommended R.P.M. 1750 to 2000) and keep the buffer pad flat on the painted surface using medium to light pressure. To avoid heat build-up, do not buff the conditioner after it starts to dry. Wipe clean with a soft cloth.

   CAUTION – Dry buffing could damage paint.

3. Apply Meguiars #15 Clearcoat Conditioner to area to be polished, and smear material evenly with a W-9000 finish pad before starting buffer. Polish by keeping the pad flat against the surface using medium to light pressure (recommended R.P.M. 1750 to 2000). To avoid heat build-up, do not buff conditioner after it starts to dry.

   If swirls are visible, use a D.A. random orbital adapted with Meguiars W-6000 D.A. polishing pad and Meguiars #15 Clearcoat Conditioner.

4. Protect finish with Meguiars #26 Hi-Tech Yellow Wax (liquid or paste). Follow the recommended instructions and apply by hand or machine.

   Maintain the finish with Meguiars #34 final inspection, following the recommended procedures. Meguiar products can be purchased at local paint supply warehouses.

7. SIKKENS TECHNICAL DATA SHEETS

7.1. SIKKENS DEGREASERS AND CLEANERS

Technical Data Sheet

Description

Degreasers are solvents especially formulated to remove grease and other contaminants from bare metal, existing finishes, plastics, etc. Sikkens has three types of degreasers available to best suite your shop and the substrate to be degreased:

A. Sikkens Wax and Grease Remover M600

B. Sikkens Anti-Static Degreaser

C. Aquaprep (waterbased)

Before You Degrease

The purpose of cleaning and degreasing is to remove residual grease, oil, wax, silicones, road dirt and sand, etc. If this is omitted, then residual dirt will migrate into the fine scratches left during the sanding process. Possible silicone fish eyes and adhesion of the paint system subsequently applied to the contaminated surface will be poor and the finish may blister or delaminate in a very short time.

1. Always wash the car thoroughly to remove as much contamination as possible and to eliminate as much dirt as possible.

2. Always wear gloves when degreasing. This will accomplish two things:

    A. Eliminate solvent being absorbed into your hands.

    B. Prevent salts and oils on your hands from contaminating the surface to be refinished.

Application

1. Wax and Grease Remover M600 is a very good general purpose degreaser. It is suitable for cleaning and degreasing bare metal, existing finishes, primer surfacers, etc. It is the least aggressive of the Sikkens solvent based degreasers.

2. Anti-Static Degreaser is an aggressive greaser for cleaning bare metal and also removes the static charge from raw plastic parts and fiberglass. This product is too aggressive for lacquers but can be used on non-reversible existing finishes. Always check the reversibility of the substrate before degreasing with this product.

    NOTE – Solvent based degreasers may not be legal for use in VOC regulated areas. Always check local regulations.

3. Aquaprep is a waterbased cleaner/degreaser that may be used on all substrates. Aquaprep will better remove water soluble contaminants (such as tree sap or sweat and salts from your hands) than solvent based degreaser. Because of its extremely low VOC content, this product can be used in most VOC regulated areas.

    Aquaprep can be wiped on or may be misted on with the use of a pump spray bottle. Allow the solution to remain on the surface for two or more minutes to loosen and float contaminates. Wipe with clean, dry towels. For difficult areas or stronger cleaning, repeat this process. The surface may be rinsed with clean water if desired.

Degreasing Technique

When a repair is to be made or a finish is to be recoated, the first thing to do after washing the car is to clean and degrease the body panel under treatment. Wet a clean cloth with one of the above three products and clean/degrease the surface under treatment. Immediately thereafter, wipe the surface dry with clean, dry cloths. Always use two cloths, as one cloth will merely shift rather than remove dirt and grease.

NOTE – Replace cloths being used for degreasing and cleaning regularly by clean ones. Always place used degreasing rags in a sealed container that meets local requirements to avoid the risk of spontaneous combustion fire.

Unsanded Existing Finishes

1. Water - Wash down the vehicle with detergent and warm water. This will dissolve water soluble contaminants, ie., bird droppings, tree sap, etc.

2. M600, Anti-Static Degreaser, Aquaprep - Wash down area to be repaired with one of the degreasers and cleaners. This will remove any contaminant that cannot be removed with water.

3. With a clean towel, dry off the degreaser and cleaner before it has time to evaporate. --Always use one fresh towel for washing down and one fresh dry towel for wiping dry. --Replace towels regularly.

NOTE – For surity against water soluble contaminant remaining, apply Aquaprep to the surface prior to topcoating.

NOTE – Never allow the degreaser and cleaner to evaporate, the contaminate will remain. Wipe the surface dry with a clean towel before the degreaser is allowed to evaporate.

Sanded Existing Finishes

Repeat Steps 2 and 3 one more time after sanding and prior to topcoating.

Untreated Plastic Parts

1. Water - Wash down the unpainted plastic part with warm water and detergent.

2. Anti-Static Degreaser - Wash down plastic part with Anti-Static Degreaser. The stronger solvent in Anti-Static Degreaser removes mold release agents.

3. With a clean towel, dry off the Anti-Static Degreaser before it has time to evaporate. After this treatment, the surface is also rendered anti-static.

Anti-Static Degreaser should also be used on painted plastic parts. Follow the same procedure for unpainted plastic parts.

NOTE – The use of Aquaprep must replace Anti-Static Degreaser in areas where the use of low VOC products are mandated.

Bare Metal

1. M600, Anti-Static Degreaser, Aquaprep - Wash down the metal with one of the degreasers and cleaners. This will ensure that the stubborn contaminants will be removed during final degreasing and cleaning.

NOTE – With all cleaning and degreasing activities: once the vehicle has been cleaned, it must never be touched with the bare hand; as salts, moisture and oils can be transferred to the prepared surface which may result in adhesion or blistering problems. It is particularly important that hand protecting barrier creams are never used near an automobile that is to be refinished.

Special Instruction for Cleaning and Degreasing of Truck Body Constructions

It is important to prevent dirt residues from getting into construction grits of vans, trucks, etc. during cleaning and degreasing. They might cause adhesion problems when the paint is applied. Vertically fitted parts should, therefore, first be cleaned and degreased from the bottom upwards and subsequently from the top downwards.

Degreasing and Condensation on Metal Surfaces

After a surface has been cleaned and degreased, the solvent will evaporate. The heat needed for evaporation is withdrawn from that surface, making it colder than the surrounding atmosphere, which results in (often not visible) condensation on the surface. Allow the moisture sufficient time to evaporate. The first coat of paint can be applied as soon as the surface has regained the temperature of the surrounding atmosphere. Earlier application of the coat may lead to adhesion problems.

The same problem may arise if a vehicle is transferred from a cold room to a warm one, or from outdoors to indoors. Allow vehicles a minimum of one hour to acclimatize. Double-walled vehicles (and certainly insulated ones) require some hours to acclimatize.

Stock Keeping: Container Size

Sikkens M600: I gallon and 5 gallons; Anti-Static Degreaser: 5 liters; Aquaprep: I gallon

Minimum Shelf Life

2 years if stored in original container at room temperature. Keep Aquaprep from freezing.

Safety Aspects: Flashpoints (Closed Cup)

Sikkens M600: <21°C; Anti-Static Degreaser: <21°C; Aquaprep: <21°C

VOC Content

Table 4 VOC Content

Type	Lbs/gal	grams/liter
Sikkens M600	6.38	765
Anti-Static Degreaser	6.43	772
Aquaprep	<1.4	15

Warnings

This material is designed for application only by trained professional personnel using proper equipment and is not intended for sale to the general public. READ AND UNDERSTAND THE MATERIAL SAFETY DATA SHEET BEFORE USING THIS PRODUCT.

Isolate from heat, electrical equipment, sparks, and open flame. Vapor may cause flash fires. Use with adequate ventilation. Do not breathe vapors or spray mist. Use NIOSH/MSHA approved respirator during any contact with this product. Follow manufacturer's directions for respirator selection and use. In confined areas, use NIOSH/MSHA approved airline respirator or hood.

Avoid contact with eyes, skin, and clothing. Wear personal protective equipment as outlined in the Aerial Safety Data Sheet. Wash thoroughly with soap and water in case of any contact. When a finish, exhaust all vapors in a safe manner. Product produced from welding or cutting the dried finish should be avoided.

Keep container tightly closed when not in use. In case of spillage, absorb with inert material and of in accordance with applicable regulations. Paint arrestors (spray booth filters), sanding dust, rags, paint strainers, etc., may be considered as hazardous waste and must be disposed of in accordance with applicable regulations.

First Aid

In case of eye contact, flush immediately with plenty of water for at least 15 minutes and get attention; for skin, wash thoroughly with soap and water. If affected by inhalation of vapor or-by mist, remove to fresh air, get medical attention. If swallowed, get medical attention.

The contents of this package must be blended with other components before the product can be used. Before opening packages, read all warning labels and the Material Safety Data Sheet and follow all precautions.

Notice

Reports have associated repeated and prolonged occupational overexposures to solvents with permanent brain nervous system damage. Intentional misuse by deliberately concentrating and inhaling contents may be harmful or fatal.

If the Material Safety Data Sheet lists any product being used as containing heavy meal compounds (Numbers 26,27,28,38,48,53,54,73,79), inform your hazardous waste management company.

Disclaimer

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Since Akzo Coatings Inc. has no control over the conditions under which the product is transported, stored, handled, used or applied, buyers must determine for themselves, by preliminary tests or otherwise, the suitability of the product for their purposes.

7.2. WASHPRIMER EM

Technical Data Sheet

Description

Two-part self etching and passivating primer for cars, trucks and fleets. It offers excellent protection against corrosion to bare metal, eliminating the need for metal conditioning, provided a minimum film thickness of 1 mil is applied.

Product & Additives: Main Product & Hardener

Washprimer EM; Washhardener

Application: Suitable Surfaces

Washprimer EM can be applied directly over:

- Degreased and sanded existing finishes, with the exception of thermoplastic acrylic lacquers.
- Steel, aluminum and galvanized steel.
- Fiberglass
- Sikkens Polykit®, Sikkens Polystop™ LP, Sikkens Kombi Putty, Sikkens Polysurfacer.

Surface Preparation

Degrease and sand steel, remove any mild by sandblasting if necessary. Then final sand with #80 - #120 grit paper dry.

Degrease aluminum and sand with #150 - #180 grit dry or scuff with a red scuffing pad.

Degrease galvanized steel and sand with #1 - #180 grit dry.

Degrease fiberglass and sand with #150 - #240 grit dry.

Wet sand Sikkens Kombi Putty with #400 - #500 grit.

Dry sand Sikkens Polykit, Polystop LP, Polysoft, or Sikkens Polysurfacer. Final sand with #240 - #280 grit dry.

Mixing Ratio

1 part by volume of Washprimer EM with 1 part by volume of Washhardener.

Spraying Viscosity

The proper spraying viscosity is achieved by using the recommended mixing ratio. 19-20 sec ZAHN cup #2(17-18 sec DIN #4) at 70°F (20°C).

Contains Polyvinyl Resins. When mixed, contains Phosphoric Acid.

Mixing Ration is 100:100, Autobase Metallic, Sikkens 1.2.3 Reducer

Use any Sikkens Measuring Stick

Application Method: use a syphon gun, 1-2 x 1; 0.055" - 0.063" (1.4 - 1.6mm); 25-30 psi (1 - 1/2 - 2 bar)

Flash Off: 4-6 minutes at 70°F (20°C)

Drying Time: 1 hour at 70°F (20°C)

Humidity

Washprimer EM can be applied at a relative humidity of up to 90 percent.

Pot Life

After the components have been mixed, the pot life is 14 days at 70°F (20°C).

Spray Gun and Pressure

Table 5 Spray Gun and Pressure Table

Type	Spray Gun Fluid Tip	Spraying Pressure	Fluid Pressure
Siphon Feed	0.063" - 0.071" (1.6 - 1.8 mm)	40 - 50 psi (3 - 4 bar)	
Gravity Feed	0.059" - 0.067" (1.5 - 1.7 mm)	40 - 50 psi (3 - 4 bar)	
Pressure Feed	0.039" - 0.047" (1.0 - 1.2 mm)	40 - 50 psi (3 - 4 bar)	10 - 14 psi (0.8 - 1.0 bar)
HVLP	0.039" - 0.067" (1.0 - 1.7 mm)	MAX 10 psi (MAX 0.8 bar)	3 - 8 psi (0.3 - 0.6 bar)

Application Method

PRIMARY USE: As a sef etching passivating primer on bare metal, two or three coats can be applied. It is recommended to spray a lighter coat first on topcoats that are not fully cured (fresh synthetic surfaces).

ALTERNATE USE: As additional corrosion protection prior to application of Autocryl Filler Off White, Autocryl 3+1 Filler, Autonova Filler, Autonova Non Sanding Filler or Priming Filler 680. Apply one single coat only of Washprimer EM.

Film Thickness

Approximately 1.0 mil per single coat.

Clean of Equipment

With Sikkens Cleaning Solvent or lacquer thinner.

Drying

Primary Use

Dry to sand: 30 minutes at 140° F (60°C); 1 hour at 70°F (20°C); 1-1/2 hour at 50°F (10°C). Force drying at temperatures of up to 250°F is possible.

Alternate Use:

Dry to recoat: 15 minutes at 70°F (20°C); 30 minutes at 50°F (10°C).

NOTE – Never apply a polyester based product directly over Washprimer EM.

Sanding

Presand with #400 grit paper wit moving in stages to final sanding with #500-#600 grit west or presand with #240 grit dry moving in stages to final sanding with #360-#400 grit dry.

Suitable Topcoats

WAshing Primer EM can be topcoated after sanding with Autocryl Acrylic Urethane Enamel system or Autobase/Autoclear system.

NOTE – Autobase Solid Colors: When refinishing with Autobase solid colors containing 75% or more "00" White, Washprimer EM must be isolated. Products that may be used are: Autocryl Filler Off White, Autocryl 3+1 Filler, Autonova Filler, and Autonova Non-Sanding Filler.

Autonov/Autonova Clear: When refinishing with Autonova or Autobase/Autonova Clear, Washprimer EM must first be recoated with Autonova Filler or Autonova Non-Sanding Filler.

Coverage Rate

99 sq. ft./liter of unmixed paint per single coat.

Stock Keeping

Color: Beige

Container Size

Washprimer EM: 1 quart and 1 gallon

Washhardener: 1 quart and 1 gallon

Minimum Shelf Life

Two years if stored unopened at room temperature

Safety Aspects: Flashpoint (Closed Cup)

Washprimer EM: 54°F

Washhardener: 46°F

VOC Content

Washprimer EM: 5.5 lbs/gal; 660 grams/liter

Washhardener: 6.7 lbs/gal; 810 grams/liter

RTS VOC

Washprimer EM: 6.2 lbs/gal; 745 grams/liter

Warnings

This material is designed for application only by trained professional personnel using proper equipment and is not intended for sale to the general public. READ AND UNDERSTAND THE MATERIAL SAFETY DATA SHEET BEFORE USING THIS PRODUCT.

Isolate from heat, electrical equipment, sparks, and open flame. Vapor may cause flash fires. Use with adequate ventilation. Do not breathe vapors or spray mist. Use NIOSH/MSHA approved respirator during any contact with this product. Follow manufacturer's directions for respirator selection and use. In confined areas, use NIOSH/MSHA approved airline respirator or hood.

Avoid contact with eyes, skin, and clothing. Wear personal protective equipment as outlined in the Aerial Safety Data Sheet. Wash thoroughly with soap and water in case of any contact. When a finish, exhaust all vapors in a safe manner. Product produced from welding or cutting the dried finish should be avoided.

Keep container tightly closed when not in use. In case of spillage, absorb with inert material and of in accordance with applicable regulations. Paint arrestors (spray booth filters), sanding dust, rags, paint strainers, etc., may be considered as hazardous waste and must be disposed of in accordance with applicable regulations.

First Aid

In case of eye contact, flush immediately with plenty of water for at least 15 minutes and get attention; for skin, wash thoroughly with soap and water. If affected by inhalation of vapor or-by mist, remove to fresh air, get medical attention. If swallowed, get medical attention.

The contents of this package must be blended with other components before the product can be used. Before opening packages, read all warning labels and the Material Safety Data Sheet and follow all precautions.

Notice

Reports have associated repeated and prolonged occupational overexposures to solvents with permanent brain nervous system damage. Intentional misuse by deliberately concentrating and inhaling contents may be harmful or fatal.

This product contains chromates (Cr VI); dispose of the can and any items (rags, filters, paint booth arrestors, etc.) that come into contact, as hazardous waste. Inform your hazardous waste management company.

Disclaimer

The technical information and suggestions for use made herein are based on Akzo Coatings Inc. research and experience and are believed to be reliable, but such information and suggestions do not constitute a warranty.

Since Akzo Coatings Inc. has no control over the conditions under which the product is transported, stored, handled, used or applied, buyers must determine for themselves, by preliminary tests or otherwise, the suitability of the product for their purposes.

7.3. WASHPRIMER CR

Technical Data Sheet

Description

A transparent yellow, self-etching washprimer with superior corrosion resistance and excellent adhesion on steel, galvanized steel, aluminum and stainless steel. Initially developed for the aircraft industry, but modified to be used in the car refinishing, commercial and agricultural vehicle market eliminating the need for metal conditioning.

Products & Additives

Product	Washprimer CR
Hardener	Washhardener
Basic Raw Material	Washprimer CR: Polyvinylbutyral; Washhardener: Phosophoric acid

Application - Suitable Surfaces

Steel, after degreasing with Sikkens M600 or Anti-Static Degreaser, sand with #80 then #120 grit paper dry or scuff with a red scuffing pad.

Galvanized steel, after degreasing with Sikkens M600 or Anti-Static Degreaser, sand with #120 grit dry or scuff with a red scuffing pad.

Aluminum, after degreasing with Sikkens M600 or Anti-Static Degreaser, scuff with a red scuffing pad or sand with #150 - #180 grit dry.

Stainless Steel, after degreasing with Sikkens M600 or Anti-Static Degreaser, sand with #150 - #180 grit dry or scuff with a red scuffing pad.

Mixing Ratio

Mix: 1 part of Washprimer CR with 1 part of Washhardener by volume. For easy and accurate mixing, use the Sikkens measuring stick.

NOTE – Please see Technical Data Sheet on Sikkens degreasers and cleaners for further information.

A. Contains polyvinylbutyral resins. When mixed, contains phosphoric acid.

B. Mixing ratio: 100:100, Washprimer CR, Washhardener.

C. Use the Sikkens Measuring Stick. All Measuring sticks may be used.

D. Application method with Syphon gun: 1x1, 0.063" - 0.071" (1.6 - 1.8 mm); 40 - 50 psi (3-4 bar)

E. Drying time: (non-sanding), After 15 minutes at 70°F (20°C); Within 8 hours at 70°F (20°C).

Spraying Viscosity

The proper spraying viscosity is achieved by using a 1:1 mixing ratio. 7-18 sec ZAHN cup #2 (15-16 sec. DIN #4).

Pot Life

8 hours at 70°F.

Spray Gun and Pressure

Table 6 Spray Gun and Pressure Table

Type	Spray Gun Fluid Tip	Spraying Pressure	Fluid Pressure
Siphon Feed	0.063" - 0.071" (1.6 - 1.8 mm)	40 - 50 psi (3 - 4 bar)	
Gravity Feed	0.055" - 0.063" (1.4 - 1.6 mm)	40 - 50 psi (3 - 4 bar)	
Pressure Feed	0.043" (1.1 mm)	40 - 50 psi (3 - 4 bar)	8 - 10 psi (0.6 - .8 bar)
Airless	0.011" (0.28 mm), Angle: 40°		2000 - 3000 psi (140 - 160 bar)
HVLP	0.039" - 0.067" (1.0 - 1.7 mm)	MAX 10 psi (MAX 0.8 bar)	3 - 8 psi (0.3 - 0.6 bar)

Recommended Conditions of Application

Minimum temperature: 60°F.

Relative humidity: maximum 75%.

Application Method

Only apply one medium coat. Do not attempt to spray until coverage is achieved since the material is transparent.

Film Thickness

0.3 - 0.4 mils for this noe medium coat.

Cleaning of Equipment

With Sikkens cleaning solvent or lacquer thinner.

Drying Times

Dust free: after 10 minutes at 70°F.

RECOATABILITY: after 15 minutes but within 8 hours at 70°F.

NOTE – Do not sand Washprimer CR.

Recoatability

Washprimer CR can be recoated (non-sanding) with: Autocryl® 3+1 Filler, Autocryl Filler Off White, Autocryl Sealer Transparent, Autonova Non-Sanding Filler, Autonova Filler, Priming Filler 680, and Autocryl.

NOTE – DO NOT recoat Washprimer CR with polyester products such as Polykit, Polysoft, Polystop LP or Polysurfacer.

Coverage Rate

300 sq. ft./liter or unmixed paint per single coat.

Stock Keeping Color

Yellow

Medium Shelf Life

One year if stored unopened at room temperature.

Container Size

Washprimer CR: 1 quart and 1 gallon.

Washhardener: 1 quarter and 1 gallon.

Safety Aspects: Flashpoint (Closed Cup)

Washprimer CR: 55°F.

Washhardener: 46°F.

VOC Content

Washprimer CR: 6.0 lbs/gal; 720 grams/liter

Washhardener: 6.8 lbs/gal; 810 grams/liter

Ready to Spray Voc

Washprimer CR: 6.4 lbs/gal; 770 grams/liter

Warnings

This material is designed for application only by trained professional personnel using proper equipment and is not intended for sale to the general public.

Keep away from heat sparks, and open flame. Vapor may cause flash fires. Use with adequate ventilation. Do not breathe vapors or spray mist. Wear an appropriate properly fitted respirator (NIOSH/MSHA approved) during and after application unless air monitoring demonstrates vapor/mist levels are below applicable limits. In confined areas, wear a positive pressure air supply respirator or hood. Follow manufacturer's recommended directions for respirator use. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling.

First Aid

In case of eye contact, flush immediately with plenty of water for at least 15 minutes and get medical attention; for skin, wash thoroughly with soap and water. If affected by inhalation of vapor or spray mist, move to fresh air, get medical attention. If swallowed, get medical attention.

The contents of this package must be blended with other components before the product can be used. Before opening the packages, read all labels. Follow all precautions. Keep container closed when not in use. In case of spillage, absorb with inert material and dispose of in accordance with applicable regulations.

This product contains chromates (Cr VI); dispose of the can and any items (rags, filters, paint booth arrestors, etc.) that come into contact, as hazardous waste. Inform your hazardous waste management company.

Notice

Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. Read Material Safety Data Sheet before using.

Disclaimer

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7.4. AUTOCRYL FILLER OFF WHITE

Technical Data Sheet 3.2.6

Description

Autocryl Filler Off White is a tintable zinc chromate free acrylic urethane surfacer that can be used in two different ways:

A. As a wet-on-wet (non-sanding) primer-sealer.

B. As a primer-surfacer that can be sanded for extra smoothness. Being urethane based, Autocryl Filler Off White provides excellent hold-out of gloss of the topcoats applied over it. Its wet-on-wet qualities makes it an ideal primer-surfacer for car refinishing and commercial vehicle finishing.

Product

Autocryl Filler Off White

Hardeners

Autocryl 1.2.3 Hardener

Autocryl MS Hardener Slow, Autocryl MS Hardener Slow may be used in place of 1.2.3 Hardener. This will not affect the mixing ratio, flow or drying characteristics of Autocryl Filler Off White.

Reducers

Autocryl Non-Stop Reducer, for very small areas. Temperature Range: 60°F - 70°F.

Sikkens 1.2.3 Reducer Fast, for spot and panel repairs. Temperature Range: 60°F - 70°F.

Sikkens 1.2.3 Reducer Slow, for spot and panel repairs. Temperature Range: 65°F - 85°F. Also for larger areas at lower temperatures.

Sikkens 1.2.3 Reducer Extra Slow, for larger areas and overall refinishing. Temperature Range: 80°F - 95°F.

Autocryl Temp-O-Actif II, for spot, panel and complete resprays to obtain faster curing.

Additives

Sikkens Retarder, to be used in combination with Sikkens 1.2.3 Reducer during high temperature or while spraying very large objects.

Autocryl Elast-O-Actif, to be used to increase the flexibility of Autocryl Filler Off White when applied to plastic parts.

Basic Raw Materials

Autocryl Filler Off White: Hyproxy Acrylic Resins

Autocryl 1.2.3 Hardener: Poly-isocyanate Resin

Autocryl MS Hardener Slow: Poly-isocyanate Resin

Application: Suitable Surfaces

Autocryl Filler Off White can be applied over

- Existing finishes, degreased and sanded with #320-#360 grit paper dry or #500-#600 grit wet.
- Sikkens Polykit, Polystop LP or Polysoft, sanded with #280-#320 grit paper dry.
- Steel, degreased and sanded with #80 grit paper then #120 grit dry.
- Fiberglass, free of release coat, degreased and sanded with #240 grit dry.
- Autocryl 3 +1 Filler or Autonova Filler, sanded with #320-#360 grit dry or #500-#600 grit wet.
- Sikkens Washprimers, after applying 1 coat, allow a Washprimer to dry for 15-20 minutes (Non-Sanding).
- Sikkens Kombi Putty, sanded with #320-#360 grit dry or #500 grit wet.

Although Autocryl Filler Off White will provide adequate adhesion and protection when applied directly over bare steel, for larger areas or new vehicles including zinc coating, stainless steel and aluminum. Autocryl Filler Off White must always be applied over Washprimer CR. (See Technical Data Sheet 1.1.8)

A. Contains acrylic resins, xylene and other ingredients. When mixed, Autocryl Filler Off White contains isocyanates.

B. Mixing Ratio is: 100:50:30. Autocryl Filler Off White, Autocryl 1.2.3 Hardener/Autocryl MS Hardener slow Sikkens 1.2.3 Reducer.

C. Use any Sikkens Measuring Stick #1 (Black).

D. 2 - 3 x1

   0.055" - 0.067" (1.4 - 1.7mm)

   40 - 50 psi (3-4 bar)

E. Flash off is 5 - 10 minutes at 70°F (20°C)

F. Drying time is (Wet-on-wet) Minimum 15 minutes at 70°F (20°C); (Non-Sanding), Maximum 7 hours at 70°F (20°C).

Mixing Ratio

100 Parts by volume of Autocryl Filler Off White

50 Parts by volume of Autocryl 1.2.3 Hardener or Autocryl MS Hardener Slow

30 Parts by volume of Sikkens 1.2.3 Reducer

For easy and accurate mixing, use the Sikkens Measuring Stick #1 (black).

Spraying Viscosity

17 -18 sec. Zahn cup #2 (15 - 16 sec. Din. cup #4) at 70°F (20°C).

Pot Life

Table 7 Spray Gun and Pressure Table

Type	Spray Gun Fluid Tip	Spraying Pressure	Fluid Pressure
Siphon Feed	0.055" - 0.067" (1.4 - 1.7 mm)	40 - 50 psi (3 - 4 bar)	
Gravity Feed	0.047" - 0.055" (1.2 - 1.4 mm)	40 - 50 psi (3 - 4 bar)	
Pressure Feed	0.039" - 0.047" (1.0 - 1.2 mm)	40 - 50 psi (3 - 4 bar)	10 - 14 psi (0.8 - 1.0 bar)
HVLP	0.031" - 0.059" (1.0 - 1.7 mm)	MAX 10 psi (MAX 0.8 bar)	3 - 8 psi (0.3 - 0.6 bar)

Application Method

As a wet-on-wet (Non Sanding) Primer Sealer:

Apply one think single coat over bare metal areas. Allow this to flash for 5-10 minutes, then apply one single wet coat. If necessary, one more single coat may be applied after an additional 5-10 minute flash time.

As a Primer Surfacer that can be sanded for extra smoothness:

Apply two - three single flowing coats, allowing 5-10 minutes flash time between coats. The number of coats depends on the film thickness desired.

Film Thickness

1.0 - 1.2 mil per single coat

Cleaning of Equipment

With Sikkens Cleaning Solvent or lacquer thinner.

Drying Times

Table 8 Drying Times Table

Temp.	Wet-On-Wet	To Sand
At 70°F	Minimum 15 Minutes	8 Hours
At 80°F	Minimum 10 Minutes	7 Hours

Table 8 Drying Times Table (cont.)

Temp.	Wet-On-Wet	To Sand
At 100°F	Minimum 10 Minutes	3 Hours
At 140°F		1 Hour

NOTE – If top coating with Autobase/Clear Coat System, the Autocryl Filler Off White should not be allowed to dry longer than 1 hour at 70°F. If so, sanding is required

Autocryl Filler Off White can be top coated wet-on-wet after a flash off time of 15 minutes at 70°F (20°C) at which time the product has set to an eggshell gloss. Within a maximum of 8 hours at 70°F, it can be top coated with Autocryl without sanding. After a drying time of 8 hours at 70°F, Autoryl Filler Off White must be sanded before further recoating.

Sanding

After the stated dry times, Autocryl Filler Off White can be sanded with #360-#400 grit paper dry or #500-#600 grit wet.

Recoatability

Autocryl Filler Off White (wet-on-wet or sanded) can be top coated with either Autocryl or Autobase.

Spot Repairs

Spot repairs or fading out can be made with Autocryl Filler Off White (wet-on-wet). After applying the two coats in the repair area, add to the ready to spray material, 100% Sikkens 1.2.3 Reducer and fade out in the area adjacent to the repair. Then spray pure SRA Reducer to complete the fade out.

Tinting

If desired, Autocryl Filler Off White can be tinted with 5-10% of Autocryl toners. Recommended toners are: Black 242, Red 568, Blue 575, Green 332.

Coverage Rate

150-170 sq ft/liter of unmixed paint per single coat.

Stock Keeping Color

Off White

Container Size

Autocryl Filler Off White: 1 Quart and 1 Gallon

1.2.3 Hardener: 1 Quart and 1 Gallon

MS Hardener Slow: 1 Quart and 1 Gallon

1.2.3 Reducer : 1 Gallon and 5 Gallon

Minimum Shelf Life

Autocryl Filler CF: 2 years if stored unopened at room temperature.

Autocryl 1.2.3 Hardener: 1 year if stored unopened at room temperature.

Autocryl MS Hardener: 1 year if stored unopened at room temperature.

Safety Aspects: Flashpoint (Closed Cup)

Autocryl Filler Off White: 78°F

1.2.3 Hardener: 81°F

Autocryl MS Hardener Slow: 14°F

Sikkens 1.2.3 Reducer Extra Slow: 75°F

VOC Content

Autocryl Filler Off White: 3.1 lbs/gal; 370 grams/liter

1.2.3 Hardener: 5.0 lbs/gal; 605 grams/liter

Autocryl MS Hardener Slow: 5.0 lbs/gal; 605 grams/liter

Sikkens 1.2.3 Reducer Slow: 7.5 lbs/gal; 905 grams/liter

Ready to Spray VOC

Mixing Ratio: 100:50:30; 4.4 lbs/gal

Safety Data Warnings

This material is designed for application only by trained professional personnel using proper equipment and is not intended for sale to the general public. READ AND UNDERSTAND THE MATERIAL SAFETY DATA SHEET BEFORE USING THIS PRODUCT.

Isolate from heat, electrical equipment, sparks, and open flame. Vapor may cause flash fires. Use with adequate ventilation. Do not breathe vapors or spray mist. Use NIOSH/MSHA approved respirator during any contact with this product. Follow manufacturer's directions for respirator selection and use. In confined areas, use NIOSH/MSHA approved airline respirator or hood.

Avoid contact with eyes, skin, and clothing. Wear personal protective equipment as outlined in the Aerial Safety Data Sheet. Wash thoroughly with soap and water in case of any contact. When a finish, exhaust all vapors in a safe manner. Product produced from welding or cutting the dried finish should be avoided.

Keep container tightly closed when not in use. In case of spillage, absorb with inert material and of in accordance with applicable regulations. Paint arrestors (spray booth filters), sanding dust, rags, paint strainers, etc., may be considered as hazardous waste and must be disposed of in accordance with applicable regulations.

First Aid

In case of eye contact, flush immediately with plenty of water for at least 15 minutes and get attention; for skin, wash thoroughly with soap and water. If affected by inhalation of vapor or-by mist, remove to fresh air, get medical attention. If swallowed, get medical attention.

The contents of this package must be blended with other components before the product can be used. Before opening packages, read all warning labels and the Material Safety Data Sheet and follow all precautions.

Notice

Reports have associated repeated and prolonged occupational overexposures to solvents with permanent brain nervous system damage. Intentional misuse by deliberately concentrating and inhaling contents may be harmful or fatal.

Disclaimer

The technical information and suggestions for use made herein are based on Akzo Coatings Inc. research and experience and are believed to be reliable, but such information and suggestions do not constitute a warranty.

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7.5. POLYSTOP LP™

Technical Data Sheet

Description

Polystop LP is a polyester based finishing plastic. The extra fine pigmentation provides smoothness, ease of spreading and freedom from pit holes. Ideal for finishing bodywork done with Polysoft. The long potlife (LP) of Polystop LP is an extra feature for larger surfaces or application at higher temperatures.

Polystop LP is available in a dual cartridge dispenser for accurate hardener dosage and economical use, or 2 kg. round can.

Products and Additives

Main Product

Polystop LP

Additive

Hardener for Polykit/Polystop LP

Basic Raw Materials

Polystop LP: unsaturated polyester resins

Hardener for Polykit/Polystop LP: peroxide

Application: Suitable Surfaces

Polystop can be applied over:

- Steel, degreased and sanded with #80 grit paper and finally with #120 grit dry.
- Aluminum, degreased and sanded with #80 grit, finally with #120 grit dry.
- Polyester body filler, sanded with #80-#120 grit dry, and thoroughly blown off.
- Fiberglass, free of release coat, degreased and sanded with #120-#150 grit dry and thoroughly blown off.

- Primer Surfacer EP. If one coat is applied, allow this to dry for 30 minutes before applying Polystop LP. For information on this system, refer to T.D.D. #91421.

NOTE – Do not apply Polystop LP over Washprimer EM, Washfiller 580 (formerly Autoflex Washfiller 580), Washfiller 590 or Washprimer CR.

Mixing Ratio

Mix: 100 parts by weight of Hardener for Polystop LP. 1, 2 or 3 parts by weight of Hardener for Polystop LP.

Pot Life

Table 9 Pot Life Table

Hardener	1%	2%	3%
Pot life at 70°F	20 minutes	11 minutes	7 minutes

Application Method

Apply Polystop LP with a rubber squeegee or a plastic or metal spreader. Normally Polystop LP is used as a finishing plastic in thin layers, but may be applied up to a maximum thickness of 1/8 inch after being sanded.

Cleaning of Tools

With Sikkens Cleaning Solvent or with lacquer thinner.

1. Addition of Catalyst: 100:1-3
2. Application bodyfiller: spread
3. Close can
4. Drying time: 30 minutes at 70°F (20°C).
5. Machine Sand dry with #220 - #280.
6. Use a dust particle respirator.

Drying Times

Table 10 Drying Time Table

Hardener	1%	2%	3%
Pot life at 70°F	50 minutes	40 minutes	30 minutes

Sanding

Dry sanding: pre-sand with #80 - #120 grit paper dry and final sand with #220 - #280 grit dry. Wet sanding is not recommended due to moisture absorption of all polyester products.

Recoatability

With Sikkens Polysurfacer, Washprimers, Washfiller 580, Washfiller 590, Autocryl® Filler, Autocryl 3+1 Filler, Sikkens Priming Filler 680, Autonova® Filler, Autonova Non-Sanding Filler or Primer Surfacer EP.

NOTE – When topcoated with Autonova or Autobase®/Autonova Clear, Washfiller 580, Washfiller 590 or Washprimer EM cannot be used to seal off Polyester LP. INstead use Autonova Filler or Priming Filler 680.

Color

Polystop LP: Cream

Shelf Life

Six months if stored unopen at room temperature.

Container Size

1.55kg. cartridge or 2 kg. round can.

Safety Aspects: Flashpoint (Closed Cup)

Sikkens Polystop LP: 84°F.

VOC

2.26 lbs/gal

270 grams per liter

Safety Data Warnings

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Isolate from heat, electrical equipment, sparks, and open flame. Vapor may cause flash fires. Use with adequate ventilation. Do not breathe vapors or spray mist. Use NIOSH/MSHA approved respirator during any contact with this product. Follow manufacturer's directions for respirator selection and use. In confined areas, use NIOSH/MSHA approved airline respirator or hood.

Avoid contact with eyes, skin, and clothing. Wear personal protective equipment as outlined in the Aerial Safety Data Sheet. Wash thoroughly with soap and water in case of any contact. When baking a finish, exhaust all vapors in a safe manner. Product produced from welding or cutting the dried finish should be avoided.

Keep container tightly closed when not in use. In case of spillage, absorb with inert material and of in accordance with applicable regulations. Paint arrestors (spray booth filters), sanding dust, rags, paint strainers, etc., may be considered as hazardous waste and must be disposed of in accordance with applicable regulations.

First Aid

In case of eye contact, flush immediately with plenty of water for at least 15 minutes and get attention; for skin, wash thoroughly with soap and water. If affected by inhalation of vapor or-by mist, remove to fresh air, get medical attention. If swallowed, get medical attention.

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7.6. AUTOBASE METALLIC-AUTOCLEAR® SYSTEM

Technical Data Sheet

Description

A 2-step metallic system for spot repairs and overall refinishing of cars, trucks and equipment. Provides color and depth of gloss as found on modem car manufactured today. This paint system also provides excellent gloss retention and has a strong resistance to stone chips, marring and chemical attack. Available in ready-mixed colors or by mixing on the Sikkens Color Mixing System.

Basecoat & Reducers

Autobase Metallic

Three reducers are available for Autobase Metallic:

A. Sikkens 1.2.3 Reducer Fast; for spot and panel repairs under 70°F.

B. Sikkens 1.2.3 Reducer Slow; for panel repairs and overall application in temperature range 70°F - 90°F.

C. Sikkens 1.2.3 Reducer Extra Slow; for overall application over 85°F.

Clearcoat and Hardener

Autoclear

Autocryl 1.2.3 Hardener

NOTE – Also available are Autoclear MS 1000 and Autoclear MS 3000. The use of these clears apart from other advantages, provides a two coat application. Please refer to T.D.S #5.2.22 Autoclear MS 1000 and T.D.S. #5.2.27 Autoclear MS 3000.

1. Use fresh air mask or charcoal respirator: Contains Acrylic Resins, Butyl Acetate and other ingredients.

2. Mixing ratio: 100:100 Autobase Metallic, Sikkens 1.2.3 Reducer

3. Use the Sikkens Measuring Stick. All Measuring Sticks may be used.
4. Application Method: Syphon Gun, 3x1, 0.055" - 0.063" (1.4mm - 1.6mm); 40 - 5- psi (3 - 4 bar).
5. 2 - 5 minutes at 70°F (20°C).
6. Application Method: Syphon Gun, 1 - 2x1; 0.055" - 0.063" (1.4mm - 1.6mm); 25-30 psi (1 - 1/2 - 2 bar).
7. Drying Time: 15 - 20 minutes at 70°F (20°C).
8. Use Syphon Speed Spray Gun to apply Autoclear.
9. Use fresh air mask, contains Acrylic resins, xylene and other ingredients. When mixed, Autoclear contains isocyanates.
10. Mixing ratio for three components: 100:50:30; Autoclear, Autocryl 1.2.3 Hardener, Sikkens 1.2.3 Reducer.
11. Use the Sikkens Measuring Stick #1 (Black).
12. Application Method: Syphon Gun, 3x1, 0.055" - 0.063" (1.4mm - 1.6mm); 40 - 5- psi (3 - 4 bar).
13. Flash Off: 5-10 minutes at 70°F (20°C).
14. Drying Time: 20 hours at 70°f (20°C); 45 minutes at 140°F (60°C).

Reducers

- Autocryl Non-Stop Reducer for use in Autoclear when making spot and panel repairs. Temperature range: 60°F - 75°F.
- Sikkens 1.2.3 Reducer Fast. Fast reducer for panel and spot repairs. Temperature range: 60° - 75°F.
- Sikkens 1.2.3 Reducer Slow. Medium reducer for panel repairs and overalls. Temperature range: 70° - 85°F.
- Sikkens 1.2.3 Reducer Extra Slow. A slow reducer mainly for overall jobs above 85°F.
- Temp-O-Actif II. A catalyst reducer to be used in Autoclear that can be used in place of Sikkens 1.2.3 Reducer Slow. It will accelerate curing also at low temperatures.

Additives

- Autocryl Accelerator 889. Catalyst reducer to be used in cool weather for spot, panel repairs and complete paint jobs. To speed up drying and to make buffing easier. See T.D.S. #6.39.
- Autocryl Extratop. A catalyst reducer to be used in cool weather for spot, panel repairs and complete paint jobs. To speed up drying and to make buffing easier. See T.D.S. #6.39.
- Autocryl Elast-O-Actif. Additive to increase gloss level of Autoclear. See T.D.S. #6.8.
- Autocryl Glass Resin. Additive to increase gloss level of Autoclear. Autoclear or Autobase at higher temperatures. See T.D.S. #6.20.
- Autoclear Mat. Two part acrylic urethane clearcoat with a mat finish. The desired gloss level can be achieved by intermixing it with Autoclear. See T.D.S. #5.5.1.

- Autocryl XT Hardener and Autocryl XT Reducer. A special catalyst hardener and reducer. To be used in Autoclear to speed up flash and drying times for spot and panel repairs at lower temperatures. See T.D.S. #6.24.

Notes

Autoclear can be converted into a medium solid system suitable for 2 coat application, by mixing with Autocryl MS Hardener. See T.D.S. #646 Autocryl MS Hardener. Mixing ratio: 100 parts by volume of Autoclear, 50 parts by volume Autocryl MS Hardener, 10 parts by volume any of the 1.2.3 Reducers.

Special Clear

Sikkens Basefix 790. Special clear for interiors, door jambs and to cut in parts. For more information on Basefix 790, see T.D.S. #6.12.

Basic Raw Materials

Autobase: Physically drying binders.

Autoclear: Hydroxyl acrylic resin.

Autocryl 1.2.3 Hardener: Poly-isocyanate polymer.

Sikkens Basefix 790: Acrylic lacquer resin.

Application: Suitable Surfaces

This paint system can be applied directly over:

- OEM 2-stop metallic systems and over existing finishes, degreased and sanded with #600 grit paper wet, but not over thermoplastic acrylic lacquers. In that case, the entire panel of lacquer must be sealed with Washfiller 580, Washfiller 590, Autocryl 3+1 Filler, Sikkens Priming Filler 680, Autonova Filler, Autocryl Sealer Transparent, Autocryl Filler Off White or Autonova Non-Sanding Filler. In a blending situation, use Sikkens Basefix 790.
- Sikkens Washprimer EM, Washfiller 580, Washfiller 590, Sikkens Priming Filler 680, Autonova Filler and Autocryl 3+1 Filler after final sanding with #600 grit paper wet or $400 grit.
- Autocryl Filler Off White wet-on-wet after a flash-off timer of 15-20 minutes. See T.D.S. #3.2.2.
- Autocryl Sealer Transparent, wet-on-wet after flash-off time of 15-20 minutes. See T.D.S. #6.2.10.
- Sikkens Kombi Putty in small areas sanded with #360-#400 grit dry or #600 grit wet.

Mixing Ratios

Autobase Metallic is mixed as follows:

- 1 part by volume of Autobase Metallic with,
- 1 part by volume of any Sikkens 1.2.3 Reducer

Autoclear is mixed as follows:

- 100 parts by volume of Autoclear with
- 50 parts by volume of Autocryl 1.2.3 Hardener
- 30 parts by volume of one of the recommended Reducers

Spraying Viscosity

The proper spraying viscosity is achieved by using the recommended mixing ratio.

Autobase Metallic: 16-17 sec ZAHN cup #2 (14-15 ec DIN #4)

Autoclear: 17-18 sec ZAHN cup #2 (15-16 sec DIN #4)

Pot Life

Autobase Metallic: 6 months; Autoclear: 4 hours at 70°F.

Spray Gun and Pressure

Table 11 Spray Gun and Pressure Table

Type	Spray Gun Fluid Tip	Spraying Pressure	Fluid Pressure
Siphon Feed	0.055" - 0.063" (1.4 - 1.6 mm)	40 - 50 psi (3 - 4 bar)	
Gravity Feed	0.047" - 0.055" (1.2 - 1.4 mm)	40 - 50 psi (3 - 4 bar)	
Pressure Feed	0.039" - 0.047" (1.0 - 1.2 mm)	40 - 50 psi (3 - 4 bar)	8 - 10 psi (0.6 - .8 bar)
HVLP	0.028" - 0.059" (0.7 - 1.5 mm)	MAX 10 psi (MAX 0.8 bar)	3 - 8 psi (0.3 - 0.6 bar)
Autoclear			
Siphon Feed	0.055" - 0.063" (1.4 - 1.6 mm)	40 - 50 psi (3 - 4 bar)	
Gravity Feed	0.047" - 0.055" (1.2 - 1.4 mm)	40 - 50 psi (3 - 4 bar)	
Pressure Feed	0.039" - 0.047" (1.0 - 1.2 mm)	40 - 50 psi (3 - 4 bar)	8 - 10 psi (0.6 - .8 bar)
HVLP	0.028" - 0.067" (0.7 - 1.7 mm)	MAX 10 psi (MAX 0.8 bar)	3 - 8 psi (0.3 - 0.6 bar)

Application of Autobase

Spray 3 single coats. Allow approximately 2-5 minutes flash-off between each coat. Even out the metallic pattern with a drop coat after the Autobase Metallic has flashed off completely. This is done by lowering the air pressure to 20-30 psi. Flash 15-20 minutes and apply Autoclear.

Application

Apply 3 single or 1 singles and 1 double coat of Autoclear.

Flash until touch dry after each coat (5-10 minutes).

NOTE – If sanding and buffing is necessary, one extra coat of clear must be used.

Film Thickness

Autobase: 0.3 - 0.4 mils per single coat.

Autoclear: 0.7 - 1.0 mils per single coat.

Drying Times

Table 12 Drying Time Table

Temperature	Autoclear Drying Times	Non-Stop Reducer 1.2.3 Reducers 100:50:30	Temp-O-Actif II 100:50:30	With 50 Parts Acc 889 100:50:50
50°F (10°C)	Dust Free	2 hours	1-1/2 hours	15 minutes
	Tack Free	9 hours	7 hours	2 hours
	Dry	48 hours	34 hours	14 hours
70°F (20°C)	Dust Free	30 minutes	25 minutes	9 minutes
	Tack Free	3 hours	2-1/2 hours	1 hour
	Dry	20 hours	15 hours	10 hours
100°F (38°C)	Dust Free	20 minutes	15 minutes	6 minutes
	Tack Free	1 hour	40 minutes	20 minutes
	Dry	1-1/2 hours	1-1/4 hours	45 minutes
140°F (60°C)	Dust Free	5 minutes	4 minutes	3 minutes
	Tack Free	15 minutes	10 minutes	8 minutes
	Dry	45 minutes	30 minutes	25 minutes
NOTE: Do not use Autoclear under 50°F.				

Coverage Rate

Autobase Metallic: 77-90 sq. ft./liter

Autoclear: 66 - 77 sq. ft./liter

Spot Repairs and Blend Areas

Areas where the color and the clear are to be blended in must first be degreased with Sikkens M600 and thoroughly scuffed with a gray scuffing pad and kitchen cleaner with water. The area where the Autoclear blend will end should be scoured with kitchen cleaner sprinkled on a damp cloth. Please refer to T.D.S. #7.7, Spot Repairs with Autobase Basecoat/Clearcoat.

Second Repair

If the clearcoat has been broken through, the repair area must be sealed with Autonova Non-Sanding Filler, Priming Filler 680, Washfiller 580 or Washfiller 590. Apply 2-3 light coats, flash off between coats. After drying, sand with #400 grit paper dry or #600 grit wet. Apply 1-2 coats of Basefix 790, mixed 1:1 with Sikkens 1.2.3 Reducer Fast, over the repair area before the first light coat of Autobase is applied.

Two Tone Application

Autobase Solid can be taped off after 15-20 minutes flash-off at 70°F, and a second color of Autobase Metallic can then be applied. Autoclear must be applied within 48 hours after the first color of Autobase Metallic has been sprayed.

Polishing

Dust and small surface damage can be removed by polishing the Autoclear after these drying times:

Table 13 Drying Temperature Table

Any Sikkens 1.2.3 Reducer	With 50 Parts Accelerator 889
70°F 2 days 140°F 1-1/2 hours	70°F 10 hours

NOTE – For extensive color sanding and buffing, it is necessary to apply one extra coat of >

Decals

Decals can be applied after a minimum of 2 days.

Lettering

Lettering and striping can be applied without scuffing within 48 hours. After 48 hours, scuff with a gray scuffing pad before applying lettering.

Door Jambs, Part Edges, Interiors

Apply Autobase Metallic until coverage is obtained. Flash for 15-20 minutes. Finish with 2 single coats of Sikkens Basefix 790. Basefix 790 provides enough protection for door jambs, part edges and interiors.

Cleaning of Equipment

Autobase Metallic: first rinse the spray gun and cup with 1.2.3 Reducer, then add lacquer thinner, or Sikkens cleaning solvent for final cleaning.

Stock Keeping Availability

Autobase Metallic is available ready-mixed by means of the Sikkens Color Mixing System.

Container Size

Autoclear is available in 1 liter and 5 liter containers.

Color Range

See the Sikkens Color listing, the Sikkens MM Microfilm or the computerized MIXIT System.

Minimum Shelf Life

Autobase: four years if stored in its original package at room temperature.

Autoclear: two years if stored in its original package at room temperature.

Safety Aspects: Flashpoints (Open Cups)

Autobase Metallic:..... 77°F
1.2.3 Reducer Fast:..... 75°F
1.2.3 Reducer Slow..... 75°F
Sikkens Basefix 790:..... 77°F
Accelerator 889:..... +5°F
1.2.3 Reducer Extra Slow:..... 75°F
Non-Stop Reducer:..... 18°F
Autoclear:..... 73°F
Autocryl 1.2.3 Hardener:..... 81°F

VOC Content

Autobase Mixed Color:..... 5.8 lbs/gal, 695 grams/liter
Autoclear:..... 4.10 lbs/gal, 490 grams/liter
1.2.3 Hardener:..... 5.09 lbs/gal, 605 grams/liter
Basefix 970:..... 6.19 lbs/gal, 743 grams/liter
1.2.3 Reducer Slow..... 7.53 lbs/gal, 905 grams/liter

Ready To Spray VOC

Autobase:..... 6.7 lbs/gal, 805 grams/liter
Autoclear:..... 5.0 lbs/gal, 600 grams/liter
Basefix 790:..... 6.19 lbs/gal, 742 grams/liter
Basefix 790 (100:100)..... 6.86 lbs/gal, 823 grams/liter

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Avoid contact with eyes, skin, and clothing. Wear personal protective equipment as outlined in the Aerial Safety Data Sheet. Wash thoroughly with soap and water in case of any contact. When baking a finish, exhaust all vapors in a safe manner. Product produced from welding or cutting the dried finish should be avoided.

Keep container tightly closed when not in use. In case of spillage, absorb with inert material and of in accordance with applicable regulations. Paint arrestors (spray booth filters), sanding dust, rags, paint strainers, etc., may be considered as hazardous waste and must be disposed of in accordance with applicable regulations.

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