Cleaning, Care, and Repair of Car Finish

Job No.
98 — 1

Before any maintenance or refinishing work is done on the car finish, find out the type of finish applied.

On the right hand side of the car (seen in the direction of travel) under the hood you will find an indication of the type of finish used on the car. The letters KH stand for synthetic resin enamel and "Nitro" indicates nitro-cellulose lacquer. If in doubt, use a white cloth saturated with nitrocellulose thinner and lightly rub over an inconspicuous part of the finish; if the cloth gets discolored, the finish is nitro-cellulose lacquer, whereas synthetic resin enamel will show no more than perhaps a slight swelling.

On Model 190 the standard finish is synthetic resin baking enamel. Nitro-cellulose lacquer is sometimes used for special-purpose finishes.

After its chemical hardening, the synthetic resin enamel has a high-gloss, completely sealed, and practically weatherproof surface.

The chief purpose of any maintenance work is to preserve and protect the unbroken film. Scratches and scores have an adverse influence on the quality and durability of the car finish.

To preserve the gloss of synthetic resin enamel, frequent washing of the whole car body is very important.

Note: The following instructions only apply to synthetic resin finish; for nitrocellulose lacquer see instruction sheet DBA 3101.

A. Washing

1. Do not wash in bright sunshine or when the hood is warm.
2. Do not use brushes or any other hard instruments.
3. Spray down with a divided water jet.
4. Hose off rough dirt and dust before washing with a sponge. Begin from the roof and work downward.
5. After washing, rub up the whole of the body finish carefully with a wash leather.
6. Wash out sponge and leather frequently in clean water.
7. Wash the chassis and wheels with a sponge kept specially for this purpose.
8. The water should not exceed hand temperature; it should on no account be hot.

If the car is to be shampooed, only those brands of shampoo should be used which have been tested and approved by us (for approved products see Information Sheet DBA 3100). The prescribed concentrations must be adhered to. After shampooing, wash again with clean water and rub up with a leather. As a rule, shampoo has an adverse effect on the protective properties of any polish or protective coating and it is advisable to polish or condition the finish after shampooing.

B. Removal of Tar Stains

Tar stains should be removed with Mercedes-Benz Tar Remover. For this purpose, put a few drops of tar remover on clean cotton wool, soften the stain, and rub over with clean cotton wool until the stain has disappeared.

Note: Air-drying synthetic resin enamels which have not yet dried out are liable to be attacked by the tar remover.

C. Removal of Dead Insects

Dead insects should not be allowed to dry on the car finish any longer than is necessary, since this only makes removal the more difficult. For removing the remains of insects, use a mild 1—2 percent non-alkaline soap solution. After treatment wash down with clean water.

D. Polishing and Conditioning

Although synthetic resin enamels are to a large extent weatherproof, it is advisable from time to time (every two to three months) to treat the enamel with polish. For this purpose, Mercedes-Benz Synthetic Resin Polish should be used. It is the function of this product to remove the dust, to restore the original high gloss, and to protect the car finish.

Apart from Mercedes-Benz Synthetic Resin Polish, Mercedes-Benz Preservative can also be used to treat the finish. Although the synthetic resin polish cleans the enamel more thoroughly, the preservative as a hard-wax solution gives better protection. Neither of these products contains any abrasives.

If the enamel surface is not in perfect condition after the treatment, the cause may be metal dust, cement and lime deposits from the air. If there are such deposits on the finish, the abrasive polish, Mercedes-Benz Synthetic Resin Cleaner should be used. This polish will even bring up older synthetic resin finishes which have become dull in the course of time.

Dulled metal sheen finishes will turn cloudy when rubbed up. For this type of finish, particular care should be taken to treat it in time with Mercedes-Benz Synthetic Resin Polish.

Note: In the interest of our customers we recommend that only those cleaners and polishes approved by us should be used, since these agents have been tested on the synthetic resin baking enamel which we use.

Synthetic resin finishes which have completely lost their gloss and which do not respond to synthetic resin polish and synthetic resin cleaner, can be satisfactorily brought up again with Mercedes-Benz Fine Polishing Paste. The paste is soluble in water and can be applied either with the hand or with a lambskin pad. Following this treatment, rub up with synthetic resin cleaner and apply a protective coating of Mercedes-Benz Preservative.

Note: In border-line cases, a complete refinishing job may be more advantageous.

On touched-up areas which have been treated with baking enamel with the help of infra-red heating lamps, the outer edges sometimes show. In such cases it helps to rub up with synthetic resin polish.

Air-drying synthetic resin enamels can be treated in the same way. However, since air-drying synthetic resin enamels do not keep their gloss as long as synthetic resin baking enamel, it is generally necessary to start polishing earlier.

E. Touching-up and Refinishing

1. Minor Flaws

Minor flaws, such as scratches or embedded dust particles, can be removed with Mercedes-Benz Synthetic Resin Polishing Paste. It should be borne in mind, however, that the original unbroken coat is damaged by this treatment, and that it is therefore advisable, whenever possible, to refrain from rubbing with polishing paste. If, however, this is necessary, and if the polishing paste does not do the job adequately, a very fine waterproof abrasive paper (grain 600) can be used for water sanding. These areas should then be treated with polishing paste and finally rubbed up with a synthetic resin polish. **Care should be taken in this work not to rub through the enamel!**

2. Damaged Areas

Three types of enamel can be used for refinishing larger areas:

a) MB-Synthetic Resin Baking Enamel
b) MB-Synthetic Resin 80° C Enamel
c) MB-Synthetic Resin Air-Drying Enamel

The type of enamel to be used depends on the nature of the damage and on the equipment available in the paint shop. Minor flaws which are not conspicuous should be touched up with synthetic resin baking enamel and an infra-red drying lamp. This type of work requires the services of a skilled craftsman.

If the damage is more extensive, the whole area should be sprayed with synthetic resin 80° C enamel or with air-drying enamel. The 80° C enamel requires one hour's drying at a temperature of at least 80° C. It has, however, the advantage, as compared with air-drying enamel, that it is hard when cold and if the finish coat is unsatisfactory, the area can be sanded and refinished or touched up. In the case of air-drying enamel, this is possible only after several days have elapsed. Furthermore, 80° C enamel can be hardened by means of an infra-red drying lamp in the same way as baking enamel. The greater degree of hardness, and with it the increased resistance to mechanical damage, is a further advantage of the 80° C enamel. With both types of enamel it is imperative to work in a dust-free atmosphere during the finishing process.

Note: Retouching with nitro-cellulose lacquer will not be accepted by us, since this type of lacquer does not satisfy our requirements; because of increased costs (material and wages) and because of the problem of blending in with the original synthetic resin enamel, it is bound to lead to complaints.

For all types of refinishing work only Mercedes-Benz materials should be used. The brand to be used is indicated on the plate under the hood.

G stands for Lackfabrik Glasurit-Werke Hiltrup, Westfalen
H stands for Lackfabrik Dr. Kurt Herberts & Co, Wuppertal-Barmen.

The materials should be ordered direct from the manufacturers.

F. Color Matching

In the case of older models, a change in the color tones as compared with that of the refinishing enamel may occur even though best-quality pigments are used. In such cases the refinishing enamel should be blended with the corresponding mixing enamels of the same brand; for testing purposes, spray a small piece of metal with the enamel and after drying, compare it with the finish of the vehicle.

G. Metal Finishing Work, Filling and Cleanliness

Please note that adequate metal finishing can save much time spent on filling. On all paint jobs, cleanliness is of the utmost importance. During sanding, water should not be allowed to dry on, and there must be no sand marks on the car body. It is therefore advisable to clean the surface to be painted with gasoline and a clean cloth between the various finishing processes. Instead of gasoline, MB Synthetic Resin Thinner can be used for cleaning. Before spraying on top of enamel coats, carefully remove all residue of polishing agents, particularly of those containing silicones. Always use clean cloths to make sure that silicone residues are not transferred to other parts of the body.

Silicone polishers should never be kept or used in paint shops since minute traces of silicone in the air or on the car panels may produce fish-eyes in the synthetic enamel!

The spray booths should always be under pressure and the compressed air must be completely clean.

Note: Nitro-cellulose spray may ignite if it combines with synthetic resin spray. For this reason it is imperative carefully to clean the spraying booths whenever a changeover is made from nitro-cellulose lacquers to synthetic resin enamels.

H. Metal Sheen Enamels

Metal sheen enamel finishes are difficult to touch up. Touching-up requires a high degree of skill. When larger areas are sprayed, it should be remembered that the color shade is largely dependent on the method of applying the enamel, since the metal bronze will show poor flow-out if sprayed on irregularly. For this reason, color matching should be attempted not by mixing the enamels, but by varying the spraying technique. Full wet coats produce darker shades and moist coats produce lighter shades.

Synthetic resin metal sheen enamels can be air-dried or dried at a temperature of 80° C.

I. Bodywork Protection During Spraying Operations

The parts of the car body which are not to be refinished should be protected by crepe paper masking tape or by stripping lacquer. If the finish is to be dried at temperatures above 80° C, all parts likely to be affected by high temperatures should be protected or removed; this applies in particular to laminated glass (windshield glass) and to plastic lighting assemblies (brake light, flash direction signal, and license plate light). Plastic license plates should always be removed.

Note: At drying temperatures above 100° C even masked plastic parts may be destroyed.

K. Paint Shop Equipment

Before starting on a paint job, thoroughly stir the paint in order to avoid differences in color shades, unsatisfactory drying or similar flaws. We recommend nozzles with a diameter of 0.8 mm for the

spraying of synthetic resin enamels. The drying of baking enamels requires an infra-red drying lamp bank which contains the following lamps, distributed over an area of 68 × 48 cm:

13 Osram-Siccatherm infra-red lamps, 250 Watts or
13 Philips Infra-red drying lamps, 275 Watts } 220—225 v

L. Preparation and Priming

Bare metal should be well sanded with a 220 paper and all rusty parts should be carefully cleaned. After cleaning with MB Synthetic Resin Surfacer put on a gray priming coat. Adjust the material to the correct degree of viscosity (see instructions for use, or Information Sheet DBA 3100).

Application: Apply an undercoat, and then 1—2 cross coats.

Drying: About 30—40 minutes with the lamps at a distance of 35 cm.

When the coat has cooled off, sand first with 360 paper and then with 400 paper. Surface irregularities are filled with red-brown MB Synthetic Baking Filler. Before applying the filler, sand with 280 paper, dry and clean. It is advisable to apply the filler in a number of layers rather than in one thick coat in order to prevent pores and sagging. Dry each filler layer for about 5 minutes at a lamp distance of 35 cm and bake the complete filler coat for 10 minutes before sanding. Use 280 paper for the final sanding of the cold filler coat. After cleaning, again apply 1½ cross coats of synthetic resin surfacer, dry and sand.

M. Finish-Coating Large Areas

The synthetic resin baking enamel should only be applied to an absolutely clean and completely smooth, mat-sanded surface. If the cover is unsatisfactory (e.g. in the case of red, ivory, or dark blue), it may be necessary to apply two finish coats. In this case, the first coat should be lightly sanded with 600 paper when cold.

The following instructions should be observed:

a) Black Finish

The repair area is sanded as usual with 600 paper and sprayed with baking enamel; apply a fog coat to the edge of the wet enamel, using a diluted enamel (proportion 1 part of baking enamel to 3 parts of baking enamel thinner). Even after this operation a narrow strip of the feather-edged enamel should remain visible. After that bake with infra-red drying lamps and polish as usual when the coat is cold.

b) Colored Finish

Sand the repair area with 400 paper. Contrary to the method used on the black finish, the whole sanded repair area is sprayed with baking enamel. Apply a wet coat of thinned enamel to the edges of the wet enamel and the adjacent non-sanded coat (proportion 1 part of baking enamel to 3 parts of baking enamel thinner). Bake in accordance with instructions and take care not to sand the finished coat excessively. Because of the danger of graying and in order to avoid halos it is necessary to use particular care in the baking of colored baking enamels.

See our new leaflet "Care and Repair of Body Finishes" for further details about touching-up and refinishing jobs. This brochure also contains details about enamel viscosity and sources of supply as well as our Information Sheets DBA-3100, DBA-3101, and DBA-3102.

N. Refinishing Large Panels

The priming and preparation of large panels requires the same amount of care as touching-up work. Large panels are dried in a drying oven. When 80° C enamel is used, it is particularly important to observe the prescribed temperatures. At all parts of the car the temperature should be between 85° C and 95° C. On no account should the temperature be higher than 95° C in order to avoid damage to parts of the car body. Remember that the minimum temperature of 80° C at the refinished part of the car will only be reached after a certain time-lag.

Air-drying enamels are dried at room temperature. It should be noted, however, that increased room temperatures (up to 70° C) accelerate the drying process and that room temperatures below 18° C considerably delay the drying process.

Drying Temperatures and Drying Times

Type of enamel	Drying temperature	Drying time
80° C Synthetic resin enamel	min. 80° C	60 min.
Air-drying synthetic resin enamel	Room temperature	24 hours
	(out-of-dust after 1½ hours) or	
	60°—70° C	1½ hours

Note: For further details please consult our Information Sheet DBA 3100 and the instructions published by the enamel manufacturers.

The materials used in production are checked for composition and quality before they are released. Should they reveal flaws in spite of correct application, complaints should be made to the suppliers, giving the Check or Production No. at the bottom of the can or below the directions for use. A copy of the complaint should be sent to the testing laboratory of the Sindelfingen factory.

In cases of complaints about the finish on vehicles supplied, a careful check should be made to ascertain whether the defect is not due to poor maintenance, exceptional circumstances, or natural wear and tear, or whether it is due to negligence on the part of the factory.

Two types of complaints cannot under any circumstances be recognized:

a) Chipping by Stones

Particularly during the winter months the finish may be damaged by flying gravel. The stones strike the front of the vehicle and cause little chips on the enamel surface. This cannot be recognized as a valid ground for complaint, since there is no type of automobile enamel which is proof against this kind of damage.

b) Scatter

This takes the form of white-colored or iridescent specks on the finish. They do not come from the finish itself, but are caused by waste gases from factories. As a rule, they can be removed by polishing with synthetic resin cleaner.

c) Touched-up Surfaces

Conspicuous touched-up surfaces should be tested by using nitro thinner. If the finish comes off, the surface has been touched up outside the factory with nitrocellulose lacquer. In the Sindelfingen factory, nitro-cellulose lacquer is never used to touch up synthetic resin finish.

All complaints made to the factory should be accompanied by an accurate description of the defects, since only then can we accept the responsibility for honoring the guarantee.