TOYOTA
SERVICE BULLETIN
TOYOTA MOTOR SALES, U.S.A., INC.

VOLUME
10

REFERENCE BODY
NUMBER 043
DATE 12–21–90
MODEL ALL MODELS

PREVENTION AND REPAIR OF ACID RAIN DAMAGE (REVISED)

CONDITION & CAUSE:

"Acid Rain" is the result of rainwater or other airborne moisture made acidic by chemical impurities in the atmosphere. If these acidic compounds settle and remain in contact on an exposed vehicle, especially the horizontal areas of the hood, roof, and decklid, significant damage to the painted surfaces can occur.

PREVENTION OF DAMAGE:

It is the responsibility of the dealer to protect and maintain the quality of the vehicle's finish after receipt at the dealership. Frequent vehicle washing, up to 4 times weekly during high heat and humidity periods, should be performed to minimize the potential for paint damage due to acid rain exposure. This is especially important in areas known for high frequency and concentration of acid rain and industrial fallout.

INSPECTION AND REPAIR:

Acid rain damage can frequently be identified on vehicles by the presence of visible spots on the paint surface which resemble hard water stains. Unlike water spots, however, acid rain damage cannot be removed by polishing or buffing only.

Because acid rain can etch and soften the paint, normal polishing or buffing repair procedures should not be attempted, as this will result in visible depressions in the paint surface.

CORRECTIVE ACTION:

The repair of acid rain damaged paint surfaces varies depending on how deep the acid has penetrated. Superficial damage can usually be removed by color–sanding and polishing. If the damage extends to a depth greater than 1/2 mil of the clearcoat on a pearl or metallic color, or more than 1 mil of a solid color, sanding and repainting may be necessary.

Unfortunately, there is no simple method of determining the actual extent of the acid penetration other than color sanding a representative affected area until there is no visible etching or depressions and then measuring the amount of paint removed with a magnetic type paint film thickness gauge.

PREVENTION AND REPAIR OF ACID RAIN DAMAGE (Cont'd)

REPAIR PROCEDURE FOR SUPERFICIAL TO MODERATE ACID RAIN DAMAGE: COLOR SANDING AND POLISHING

MATERIALS AND SUPPLIES NECESSARY;

- #1500 or #2000 grit wet-dry sandpaper which has been pre–soaked in clean water.
- Soft foam rubber hand–sanding pad

  – 3M P/N 051144–05530, Meguiar's P/N E7200 or equivalent.
- Liquid automotive washing soap
- Water pails
- Baking soda
- Rotary buffer, speed range 1200–2500 rpm (dual–action buffers may not adequately remove sanding scratches).
- Buffing pads

  – 3M P/N 051144–05700 or Meguiar's "Hi–Tech Finesse" Polish Pad or equivalent.
- Polishing compound

  – 3M "Finesse–It II" P/N 051144–05928 or Meguiar's Mirror Glaze #2 Hi–Tech Cleaner & #9 Hi–Tech Swirl Remover or equivalent.

CAUTION;
To minimize the possibility of burning through or hazing the paint, the following procedure should only be performed by personnel having prior experience with power rotary buffing.

REPAIR STEPS:

1. Move vehicle out of direct sunlight and allow paint surfaces to cool if necessary. Dark painted colors become warmer in direct sunlight and require a longer period to cool off.
2. Mix liquid automotive washing soap in a pail of clean water. Follow manufacturer's mixing instructions and allow wet–dry sandpaper to soak for several minutes in pail.
3. With vehicle surfaces cool, wash with soap and water and then neutralize with a baking soda and water solution (one (1) tablespoon baking soda to one quart of water), followed with a thorough fresh water rinse.

PREVENTION AND REPAIR OF ACID RAIN DAMAGE (Cont'd)

4. Using a #1500 or #2000 grit wet–dry sandpaper with a soft foam rubber sanding pad, carefully sand the affected paint areas. Be sure to dip pad and paper in water frequently to prevent clogging of paper. During this process, also wipe down each sanded area frequently to determine if spots have been removed.

NOTE:
When performing the above procedure, be sure to continuously measure paint film thickness before, during (continuously) and after sanding with a Coating Film Thickness Gauge to prevent excess paint removal. A magnetic coating thickness gauge like the ELCOMETER 211 or equivalent is an ideal instrument to monitor paint film thickness during the color sanding operation. Consult your local paint or tool jobber for pricing and availability. Remove no more than 1/2–mil on clear coats, and no more than 1–mil on solids. Also be certain to always sand in one direction and never in a circular pattern.

5. After affected areas have been sanded, install one of the recommended buffing pads and set buffer to a speed in the range of 1200–1750 RPM for a Meguiar pad, 1500–2500 for a wool pad.

6. Based on manufacturer guidelines, apply recommended polishing material sparingly to about a 2–sq. ft. section of the affected panel and wipe buffer pad once across the area. Start buffer and polish area until haze of polish material is almost gone.

   CAUTION!
   USE ONLY LIGHT PRESSURE ON THE BUFFER TO PREVENT BURN–THROUGH DAMAGE TO THE PAINT SURFACE.

7. Carefully inspect the polished paint area for remaining acid spots. If any are found, further sanding and polishing is necessary.

8. Proceed to polish and if necessary, re–sand the remaining affected areas. Be sure to continuously measure the paint film thickness during sanding to prevent excess film removal. Remove no more than 1/2 mil on clear coats, 1 mil on solids.

9. If the Meguiar's #2 Hi–Tech Cleaner is used, the #9 Hi–Tech Swirl Remover should also be used to produce a final finish. **Always use a clean buffing pad when switching between polishing materials.**

10. Apply and buff a non–silicone glaze to the polished areas if necessary to obtain a high gloss appearance.

PREVENTION AND REPAIR OF ACID RAIN DAMAGE (Cont'd)

REPAIR PROCEDURE FOR SEVERE ACID RAIN DAMAGE: SANDING AND REPAINTING

If it has been determined that the acid damage has penetrated more than 1/2 mil on a metallic or pearl color, or 1 mil on a solid color, the following guidelines for sanding and repainting should be followed.

1. Wash vehicle surface using mild automotive soap & water and rinse with Deionized Water until **all** residue is removed. Clean the affected areas with an appropiate silicone/wax remover (DuPont 3939, PPG DX330/DX380 or equivalent*).

2. Using a dual action (DA) sander, completely sand affected areas as required to eliminate any depressions or soft spots in paint surface (Note: It is recommended to sand down into the base primer coat, commonly known as the E.D. coat. It is not recommended to completely remove the E.D. coat as this coat provides corrosion protection). Finish sanding the surface with #600 grit wet/dry paper.

3. Wash vehicle surface using mild automotive soap and water. Rinse with Deionized Water until all residue is removed from the surface. Clean sanded areas with an appropiate silicone/ wax remover (DuPont 3939, PPG DX330/DX380 or equivalent*).

4. Apply a urethane enamel (DuPont Cronar, PPG Deltron, or equivalent) color coat or base coat/clear as required for maximum repair durability (lacquer type paint is not recommended for this application). Follow the paint manufacturer's recommendations for detailed application of paint and mid–coat adhesion promoter procedures as required.

* Check with State and Local ordinances regarding use and disposal of all chemicals.