



# **Trouble Shooting**

## **Tech Tips**



# Trouble Shooting Paint Problems

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- **Tree Sap / Resin**
- **Acid Rain**
- **Rail Dust / Industrial Fall Out**

# Runs

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## Cause

- Incorrect spraying viscosity, spraying technique, flash off times between coats, and film thickness.
- Defective spray gun set up.
- Incorrect spraying pressure.
- Temperature of paint, substrate or spraybooth too low.
- Incorrect choice of hardeners and thinners.



## Prevention

- Follow application recommendations on technical data sheets.
- Ensure that the spray gun is in good working order.
- Warm object and material up to room temperature of 68°F / 20°C.
- Use correct combination of hardeners and thinners.

## Remedy

- Sand and polish.
- Sand and repaint.

# Water Spotting

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## Cause

- Allowing water to come into contact with a finish that is not thoroughly dried/cured (finish may not be fully cured due to excessive film build, incorrect thinner/reducer, incorrect hardener, incorrect mixing ratio used).
- Washing finish in direct sunlight.

## Prevention

- Follow application recommendations on technical data sheets when mixing products.
- Do not allow water to come into contact with newly painted finish.
- If a new finish does get wet, dry immediately with a soft cloth.
- Wash new finishes in the shade and wipe dry (do not allow water to remain on surface).

## Remedy

- Wipe with a damp cloth, then polish.
- Or, compound and polish.
- Or, sand smooth with 1500-2000 grit sandpaper, compound and polish to restore gloss.
- Or, sand and refinish.



# Air Entrapment (Trapping Air Bubbles)

## Cause

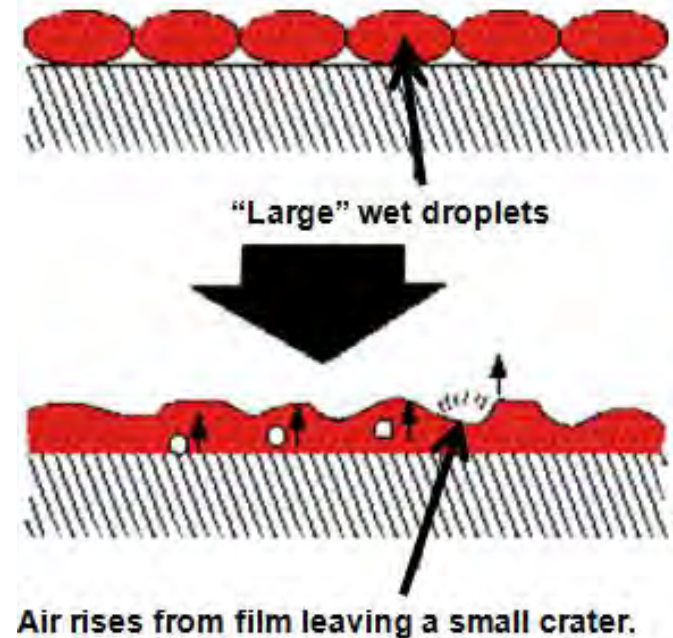
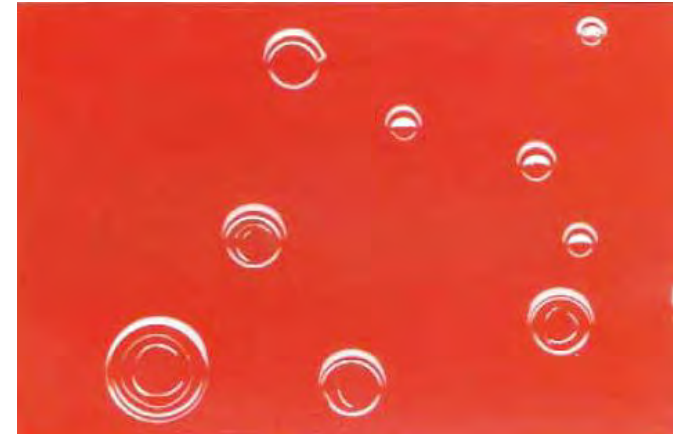
- Trapped or buried air pockets in the wet paint film that rise to the surface and "burst" causing small craters.
- Lack of atomization is the cause of air entrapment and may be due to: (A) Spray gun traveling too slow, (B) Spray gun distance too close, (C) Air pressure too low, (D) Improper spray gun setup.

## Prevention

- Maintain correct spray gun speed.
- Maintain correct spray gun distance.
- Use the recommended air pressure.
- Use the correct air cap/nozzle/needle recommended for clear coats.

## Remedy

- Sand with 1200 grit or finer sandpaper and polish.
- Sand and refinish.



# Clouding / Blushing

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## Cause

- When spraying during humid conditions, air from the spray gun and solvent evaporation lowers the substrate temperature below the dew point, causing moisture in the air to condense in or on the paint film.
- The condition is aggravated when paint is drying too fast and/or an incorrect Thinner/Reducer is being used.
- Incorrect spraying viscosity, spraying technique or flash off times.



## Prevention

- Use Manufacturer's Recommended Thinners/Reducers.
- Adjust material to correct viscosity.
- Choose suitable spray gun set up.
- Ensure sufficient flash off of color coats.
- Follow application recommendations in technical data sheets.

## Remedy

- After clear has thoroughly cured, sand surface and repaint.



# Solvent Popping

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## Cause

- Liquid solvent (thinners/reducers) becomes "trapped" in the paint film when the surface layer skins over too quickly, preventing their evaporation into the atmosphere. Solvents that vaporize within the paint film leave bubbles, pinholes or craters as they push through and "pop" the surface.
- Solvents can be trapped due to: (1) Thinner/reducer evaporating too fast for spraying conditions; (2) Inadequate flash time between coats; (3) Excessive film thickness or "piling on" of heavy/wet coats; (4) Too much air movement causing surface to "skin over" before solvents evaporate; (5) Excessive purge/flash time before force drying.



## Prevention

- Use Manufacturer's Recommended Thinners/Reducers based on temperature, humidity, air movement and size of repair.
- Allow for proper flash time between coats.
- Avoid "piling on" or double wet coats

## Remedy

- After clear has thoroughly cured, sand surface and repaint. Severe Popping will require film removal.<sup>7</sup>

# Orange Peel

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## Cause

- Under reduction and/or air pressure too low.
- Thinner / Reducer evaporates too fast for spraying conditions.
- Excessive film thickness or piling on of heavy wet coats.
- Improper spray gun set-up.
- Improper painting technique.



## Prevention

- Use proper reduction ratio and spray at recommended air pressure.
- Select recommended reducer based on temperature, humidity, air movement, and size of repair.
- Avoid heavy coats and excessive film thickness.
- Use recommended spray gun, fluid tip and air cap for the material being sprayed. *Always adjust the gun for best atomization and balanced spray pattern before paint application.*

## Remedy

- Compound or polish to reduce surface texture (or, sand smooth with 1200 or finer grit sandpaper, compound and polish to restore gloss).
- Or, sand smooth and refinish.



# Feather Edge Mapping

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## Cause

- Solvents from Top Coat have Penetrated the Primer Filler.
- Area where topcoat was sanded through to substrate not isolated with correct Primer Filler.
- Primer Filler not correctly applied.
- Insufficient drying of Primer Filler.



## Prevention

- Use the Proper Primer Filler (recommend using a Two Component Primer Filler + Hardener).
- Apply Primer Filler with medium wet coat versus heavy coats, with 5 to 10 minutes flash time between coats.
- Make sure you have adequate film build over the repair edges.
- Make sure you allow Primer Filler to dry completely before sanding and recoating.

## Remedy

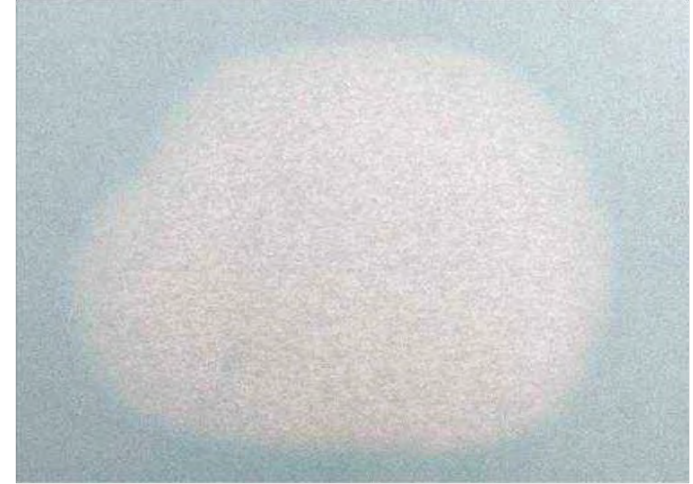
- Allow Top Coat to dry completely. Sand with fine grit sandpaper, apply two component sealer over the repair area, allow to properly dry, refinish with Top Coat.

# Body Filler Staining

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## Cause

- Bleeding of peroxide hardener in Polyester Body Filler.
- Use of too much hardener.
- Insufficient mixing.
- Polyester not isolated with two component Primer Filler.



## Prevention

- Mix precisely in accordance with directions from Manufacturer.
- Mix Body Filler and Hardener thoroughly together.

## Remedy

- Allow Top Coat to dry completely. Sand with fine grit sandpaper, apply Spray Polyester Filler, dry, sand, Prime with two component Primer Filler, dry, sand, apply Top Coat.

# Sand Scratch Swelling

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## Cause

- Sand Paper too coarse of a grit. Not followed with finer grit Sand Paper.
- Primer Filler sanded before it was completely cured.
- Insufficient isolation of Body Filler repair with two component Primer Filler.

## Prevention

- Use recommended grade Sand Paper. Body Filler can be sanded with coarse grit Sand paper, but it must then be finished with a finer grade paper (e.g. 40 grit, followed by 80 grit, followed by 180 grit).
- Isolate the repair area with a two component Primer Filler.
- Allow Primer Filler to dry / cure completely before sanding.

## Remedy

- Allow Top Coat to dry completely. Sand, apply two component Primer Filler, allow to dry / cure completely, sand, apply Top Coat.



# Cratering / Fish Eyes

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## Cause

- Oil, wax and silicone polish were not thoroughly removed from the surface before repainting.
- Contamination for airline source (e.g. compressed air that may contain oil that was not filtered out before running through Spray Gun).
- Airborne contaminants (a mist from a tire dressing being used nearby).



## Prevention

- Thoroughly remove oil, wax and silicone polish from surface with a Wax and Grease Remover both before any sanding begins (so contaminants are not embedded into finish from sanding) and before final priming and painting operations are performed.
- Maintain compressor, drain frequently in warmer weather, and use air line filters.
- Do not spray in areas where tire dressings or other contaminants are being sprayed nearby.

## Remedy

- Minor damage may be sanded and polished. More severe fish eye damage will have to be sanded and refinished.

# Dirt, Dust, or Debris in Base Color

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## Cause

- Dirt entering wet film either from airborne contamination, or from unfiltered Base Color.

## Prevention

- Ensure clean spraying conditions are present in the either the Spray Booth are area that you are spraying.
- Blow out crevices on vehicle to ensure that dust is removed prior to spraying with Spray Gun (compressed air from Spray Gun will loosen up dust particles that are present while spraying).
- Wear a lint free spraysuit (a lot of dust and debris can come from the clothes you are wearing).
- Use paint strainer to filter oaint before spraying,
- Use appropriate tack rag to gently tack surfaces before spraying.



## Remedy

- Denib dirt particles and re-apply basecoat to affected areas as required.
- You can also lightly sand the Base Color after it has dried completely with very fine grit sand paper. Reapply Base Color after removing dirt particles.

# Dirt, Dust, or Debris in Clear

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## Cause

- Dirt entering wet film either from airborne contamination, or from unfiltered Clear.

## Prevention

- Ensure clean spraying conditions are present in the either the Spray Booth are area that you are spraying.
- Blow out crevices on vehicle to ensure that dust is removed prior to spraying with Spray Gun (compressed air from Spray Gun will loosen up dust particles that are present while spraying).
- Wear a lint free spraysuit (a lot of dust and debris can come from the clothes you are wearing).
- Use paint strainer to filter oaint before spraying,
- Use appropriate tack rag to gently tack surfaces before spraying.



## Remedy

- Sanding and polishing will only remove the dirt on the surface of the clearcoat (be careful not to sand the clear too much, becuase you need adequate film build to provide proper UV protection.
- If dirt is trapped below the Clear, sand clear with fine grit sand paper, reapply Base Color and Clear.



# Loss of Adhesion (Clear Coat separating from Base Coat)

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## Cause

- Excessive film thickness of Base Coat (Base Color).
- Improper dry time between coats of Base Coat (Base Color).
- 2K Clear Coat mixed incorrectly or wrong hardener used.
- Base Coat was misted on incorrectly (too light a coat causes Base Coat to be applied too dry, creating adhesion problems).
- Base Coat solvent too fast, not allowing Base Coat be applied in a medium wet application, creating adhesion problems.



## Prevention

- Do not pile on coats of Base Color. Apply medium wet coats until hiding is achieved.
- Allow Base Coat to flash properly between coats, and before Clear is applied.
- Mix 2K clear according to Manufacturer instructions.
- Use correct drop coat / mist coat technique when trying to orient Base Coat metallics (not too dry).

## Remedy

- Sand and repaint.

# Poor Hiding

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## Cause

- Not tinting undercoats to a similar shade as color coat (e.g. Base Color).
- Color Coat (e.g. Base Color) does not cover well.
- Color Coat thinned too much.
- Color Coat not stirred properly before spraying.
- Color Coats applied too thinly.

## Prevention

- Use a color coded undercoat (e.g. if using a Red Base Color with a lot of pearl or mica, you may want to use a tintable sealer or tintable undercoat to match the color of the Red Base Color).
- If not using Ready-to-Spray color coats, then reduce / thin the color coat according to Manufacture directions. Do not over reduce.
- Stir the color coat and reducer well before using.
- Apply the color coat with medium wet coats. Use a check hiding panel to make sure you have proper coverage.

## Remedy

- Sand and apply additional color coats until hiding is achieved, allowing proper flash off between coats.



# Moisture Blisters

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## Cause

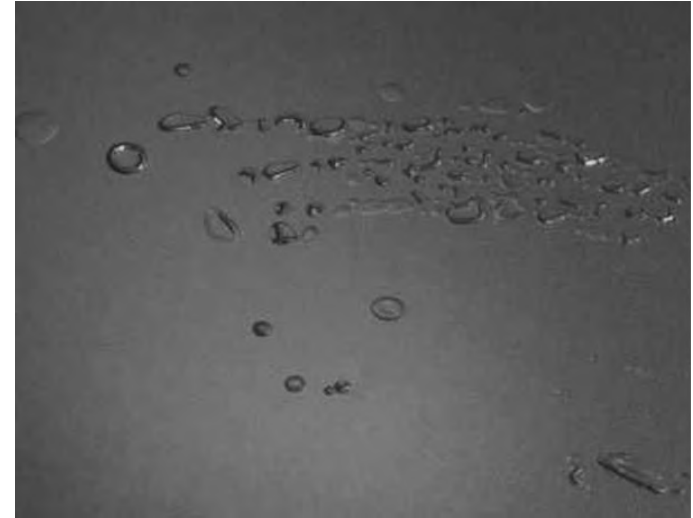
- Contaminated air supply (water is coming through air lines and is not being filtered out with air line filter).
- Air humidity too high.
- Residue from wet sanding water in corners, edges, mouldings or decorative decorative strips.

## Prevention

- Check air supply equipment regularly. Drain compressor often in warmer weather. Put filters on air lines.
- Blow and dry vehicle carefully with air gun before spraying.

## Remedy

- Remove / sand contaminated finish and repaint.



# Lifting & Wrinkling

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## Cause

- Occurs when chemical reaction takes place between two incompatible substrates.
- High film builds.
- Painting over an uncured substrate (e.g. Painting over fresh, uncured, uncatalyzed enamel paint).
- Wet-on-wet system combined with incorrect hardener/thinner.



## Prevention

- Avoid applying heavy coats. Allow material to flash off and dry in accordance to Manufacturer instructions.
- Ensure all products used are part of a refinish system (compatible with one another).
- Use recommended hardener / thinner combination
- Test substrate before painting (if you can remove with thinner and a clean cloth it may not be cured).

## Remedy

- Remove / strip coating down to substrate. Prep and refinish.

# Poor Gloss / DOI (Distinctness of Image)

## Cause

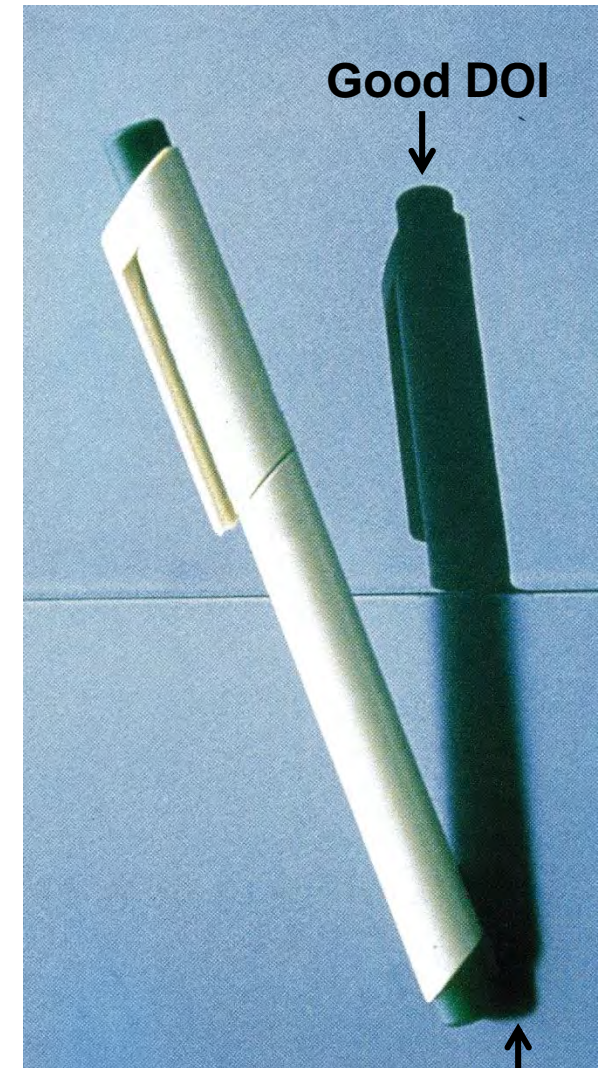
- Film thickness too high.
- Solvent-sensitive undercoats (solvents soaked into undercoats)
- Incorrect mixing or contaminated hardener.
- Use of unsuitable thinner / reducer.
- Insufficient airflow (overspray was not removed and landed back on finish when drying).
- Clearcoat applied too fast (Base Coat was not dry and solvents were trapped when Clear was applied).
- Incorrect polish applied too soon after drying.

## Prevention

- Spray over 2K undercoats that will not absorb solvents from color.
- Use proper reducers and hardeners with clears and color.
- Follow recommended flash off times.

## Remedy

- First try to wet sand and polish. If that does not work, refinish.



**Poor DOI**

# Bird Dropping Etchings

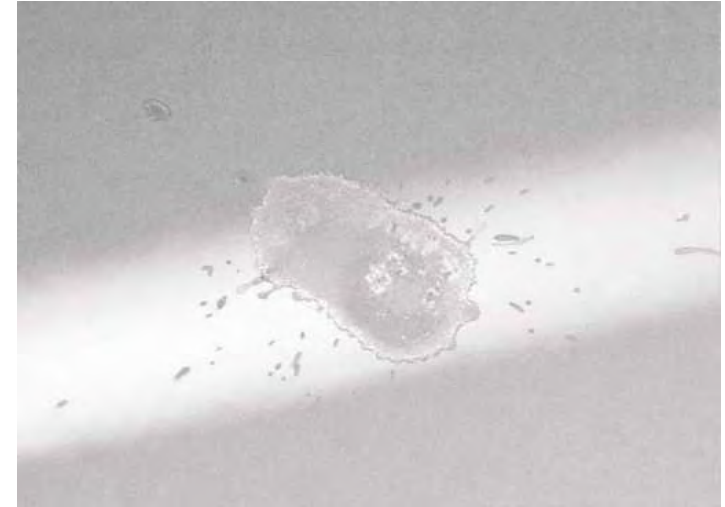
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## Cause

- Acids present in bird droppings can penetrate the paint film and cause varying problems ranging from mild straining to penetration through to the clear coat or top coat of the vehicle finish.

## Prevention

- Remove dropping as soon as possible.
- Protect finish with high quality wax polish (frequently).



## Remedy

- Cover with wet paper towel and leave for a few minutes. Remove paper and wipe away dropping, and allow to dry.
- Straining can be removed by polishing, or by using a clay bar, on the area affected.
- If damage is more severe, you may have to refinish.



# Insect Secretion

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## Cause

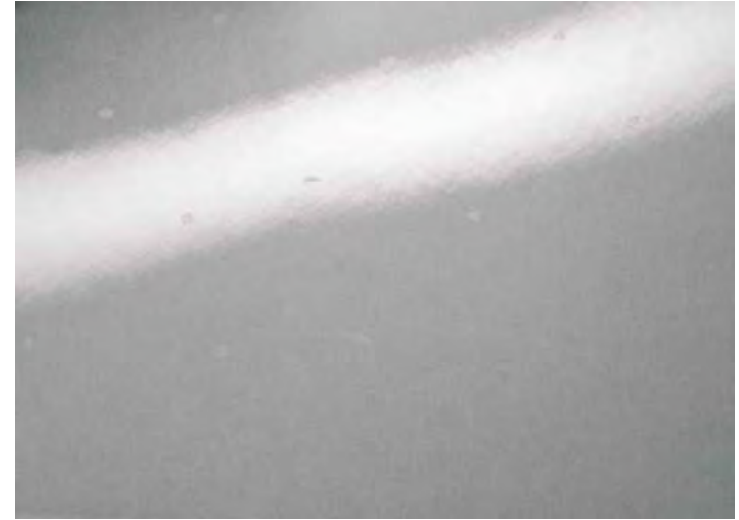
- Alkaline residue of insects during driving, in interaction with surface, climate and time.

## Prevention

- Clean off secretion immediately with warm water or mild detergent solution.
- Protect by frequent wax polishing.

## Remedy

- Minor defects can be removed by polishing, or by using a clay bar.
- Deeper damage must be sanded down and refinished.



**Normal Viewing Distance**



**Magnified**

# Chalking / Fading

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## Cause

- Sunlight UV light attacks and bleaches out certain paint pigments such as reds, yellows and oranges.
- Refinish paints of low quality with little or no UV sun blocker will fade prematurely.

## Prevention

- Frequent wax polishing to provide additional protection from the UV rays.
- Use refinish products that have proper levels of UV blockers.

## Remedy

- Fading can be remedied by machine polishing with fine polishing compound.
- Avoid over polishing (you unknowingly be removing too much clear and reducing the UV protection).
- Repaint if necessary.



# Tar Spots

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## Cause

- Driving on any road with asphalt, or a road that recently was recoated with fresh tar.

## Prevention

- Probably cannot be avoided, unless you stop driving on asphalt.
- Avoiding freshly tarred roads is a good idea.

## Remedy

- Most Wax & Grease Removers can remove road tar easily.
- Put a fresh coat of wax on your vehicle for added protection.



# Stone Chips

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## Cause

- The result of stones thrown up by vehicle tires and impacting on the paint film.
- Can lead to corrosion in extreme cases.

## Prevention

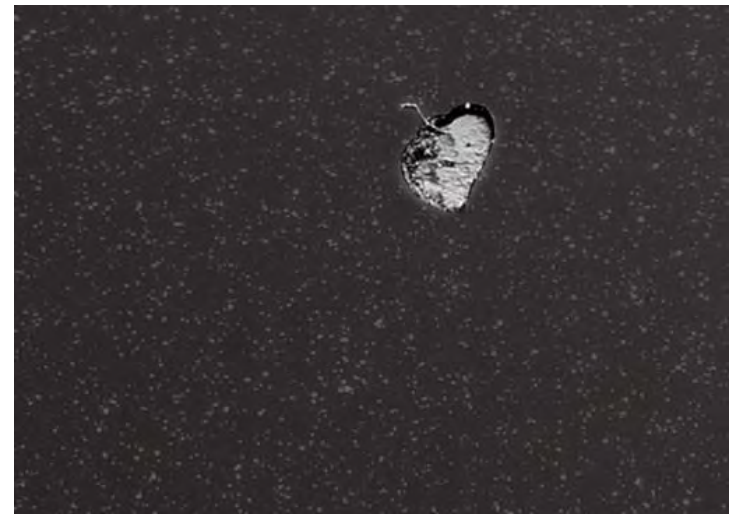
- Cover susceptible stone chip areas (e.g. Leading edge of the hood) with a Plastic Film.
- Fitting of mud flaps can reduce damage to lower areas.

## Remedy

- Very small areas can be repaired with Touch Up Paint (applied by brush or pen).
- Micro / Spot Repair can repair larger areas.



**Normal Viewing Distance**



**Magnified**

# Tree Sap / Resin

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## Cause

- Secretions of tree sap or resin. Secretions may be more or less depending on the climate or the season.

## Prevention

- Try to avoid parking underneath or near trees.
- Clean off sap/resin immediately with water or mild detergent solution.
- Protect by frequent wax polishing.

## Remedy

- Minor defects can be removed by polishing, or by using a clay bar.
- Deeper damage must be removed down to bare metal and refinished.



**Normal Viewing Distance**



**Magnified**

# Acid Rain

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## Cause

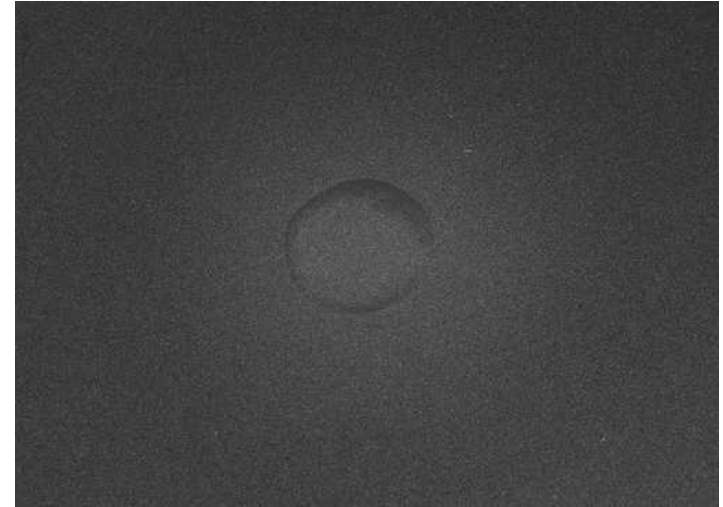
- Chemicals released into atmosphere reacting with hydrocarbons in the air.
- Visible as rain drops on surface in areas where mixture is strong.
- Can cause major damage to paint finish.

## Prevention

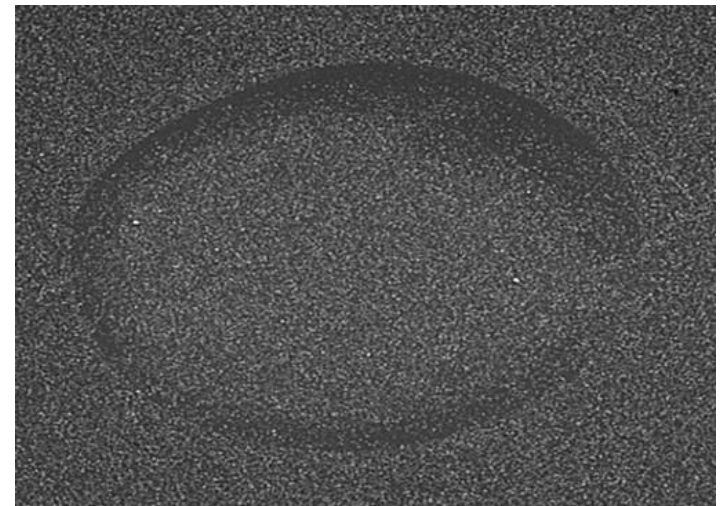
- Frequent wax polishing to provide barrier on paint film.

## Remedy

- Minor defects can be removed by polishing, or by using a clay bar.
- Acid neutralization kits are available from certain vehicle manufacturers.
- Deeper damage must be removed and refinished.



**Normal Viewing Distance**



**Magnified**



# Rail Dust / Industrial Fall Out

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## Cause

- Contamination of the surface by very small pieces of metal, e.g. rail dust, industrial fall out or grinding sparks.
- These small particles land on your vehicles finish and then start to rust. They are not always visible unless you look very closely. If left unattended, rust spots will get worse.

## Prevention

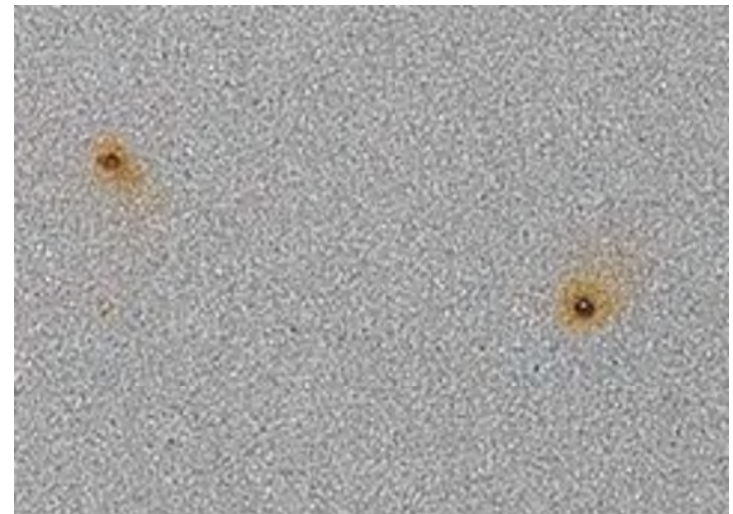
- Clean off surface immediately.
- Frequent wax polishing to provide barrier on paint film.

## Remedy

- Minor defects can be removed by polishing, or by using a clay bar.
- Acid neutralization kits are available from certain vehicle manufacturers.
- Deeper damage must be removed and refinished.



**Normal Viewing Distance**



**Magnified**



# Trouble Shooting

## Tech Tips

Please email any questions that you may have to  
[info@touchupzone.com](mailto:info@touchupzone.com)