



DuPont Automotive Finishes

DuPont™ ChromaClear® G2-4500S™ (Hyper Cure™ - High Bake and Air Dry)

Description

ChromaClear® G2-4500S™ is a second generation version of ChromaClear® 4500S™. ChromaClear® G2-4500S™ boosts throughput and saves energy with the fastest or shortest force-dry process. It is a three component clear for use on spot, multi-panel and overall repairs of OEM base/clear finishes. This clear is designed to increase production by maximizing vehicle throughput and allowing for immediate vehicle delivery, if it is baked properly. Further, ChromaClear® G2-4500S™ offers excellent application, buffability and appearance under bake or air-dry processing conditions. ChromaClear® G2-4500S™ Clearcoat can be used over ChromaSystem™ Basecoats. It can be used with ChromaPremier® reducers to obtain 4.2 lbs./gal. VOC.

This product eliminates the traditional 30 min. x 140° F baking cycle normally required to process clearcoat. In fact, the bake cycle can be reduced by 50%. That is, 10-15 min. (total cycle time, including temp. ramp up) x 160° F (booth temp. setting, not substrate temp.) (a)

(a) Beware: When competitors claim (15 min x 160° F), they typically refer to time at substrate temperature. This actually translates into a 25-30 min. bake cycle at 170-180° F booth temperature setting (this means more time, and higher energy costs than ChromaClear® G2-4500S™).

ChromaClear® G2-4500S™ must be used with new ChromaClear® G2-4507S™, G2-4508S™ and G2-4509S™ Activators; however, it still uses ChromaPremier® reducers and a mix ratio of 3:1:1 by volume. This product can be applied over ChromaSystem™ Basecoats and replaces ChromaClear® 4500S™ Clear and ChromaClear® 4505S™ and 4507S™ Activators.

General Information

Components

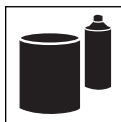
- ChromaClear® G2-4500S™ Clearcoat
- ChromaClear® G2-4507S™ Production Activator (65 - 75° F)
- ChromaClear® G2-4508S™ Medium Temp Activator (75 - 85° F)
- ChromaClear® G2-4509S™ Appearance Activator (> 85° F)
- DuPont ChromaSystem 19301S™ Blender

Reducers for 4.2 lbs./gal. VOC:

- ChromaPremier® 12365S™ Fast Reducer
- ChromaPremier® 12375S™ Medium Reducer
- ChromaPremier® 12385S™ Slow Reducer
- ChromaPremier® 12395S™ Very Slow Reducer

@ 4.2 lbs./gal. VOC

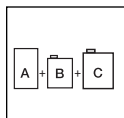
	65° F	75° F	85° F	95° F
Spot	ChromaPremier® 12365S™	ChromaPremier® 12365S™	ChromaPremier® 12375S™	ChromaPremier® 12375S™
Multi-Panel	ChromaPremier® 12365S™	ChromaPremier® 12375S™	ChromaPremier® 12385S™	ChromaPremier® 12385S™
Overall	ChromaPremier® 12375S™	ChromaPremier® 12385S™	ChromaPremier® 12385S™	ChromaPremier® 12395S™



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Tips for Success

For optimum appearance it is important to choose the correct ChromaPremier® reducer for the temperature range (see above), and the activator that meets your dry time and appearance requirements. ChromaClear® G2-4507S™ provides the fastest dry time and ChromaClear® G2-4509S™ provides the best appearance. Further, allow the sealer to flash for 20 min. before applying basecoat. If application enhancement is desired to match OEM clearcoat orange peel, use 1-2 oz. of DuPont 19379S™ Application Enhancer per ready-to-spray quart of activated clearcoat.



Mix Ratio/Viscosity

Combine the components either by volume or weight, then mix thoroughly.

For 4.2 lbs./gal. VOC

	Volume	Weight (cumulative qt.)
ChromaClear® G2-4500S™ Clear	3	548 grams
ChromaClear® G2-450XS™ (X= 7, 8 or 9) Activator (b)	1	749 grams
ChromaPremier® 12375S™ Med. Reducer	1	909 grams

(b) do not use ChromaClear® 4505S™ or 4507S™ Activators.

With ChromaPremier® 12365S™ Fast Reducer, total is 910 grams

With ChromaPremier® 12385S™ Slow Reducer, total is 906 grams

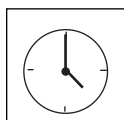
With ChromaPremier® 12395S™ Very Slow Reducer, total is 955 grams

Viscosity

15 - 17 seconds in a Zahn #2 (DuPont M-222) cup.

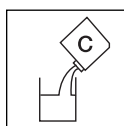
Tips for Success

Use mixing stick for accurate measurements.



Pot Life

1.5 - 2.5 hours at 70° F



Additives

Application Enhancer: DuPont 19379S™ Application Enhancer; use 1-2 ounces per ready-to-spray quart. This additive will also extend pot-life, may improve appearance and reduces orange peel, and can be used to reduce clearcoat hardness under high temperature and high humidity application conditions.

Accelerator: Use 1/2 ounce MasterTint® 389S™ per ready-to-spray quart. Use of accelerator under force dry (bake) conditions may lead to dieback.

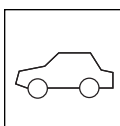
Fish Eye Eliminator: DuPont 659S™ Additive([silicone free] use 0.5 to 1.5 oz per ready-to-spray quart), or DuPont 459S™ Anti-Cratering Additive(use 0.25 to 0.5 oz per ready-to-spray quart).

Flex Additive: Only needed if optimum performance is required.

Add 2 oz. Plas-Stick® 2350S™ Flexible Additive per ready-to-spray quart of activated clearcoat or use Plas-Stick® 2350S™ as described below.

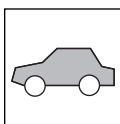
@ 4.2 lbs./gal. VOC	Volume	Weight (cumulative qt.)
ChromaClear® G2-4500S™ Clear	9	450 grams
ChromaClear® G2-4507S™ Activator	3	617 grams
Plas-Stick® 2350S™ Flexible Additive	1	668 grams
ChromaPremier® 12375S™ Reducer	3	805 grams

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Basecoats

ChromaBase® Basecoat
ChromaPremier® Basecoat



Application

Substrates

ChromaBase® Basecoat
ChromaPremier® Basecoat
DuPont 222S™ Mid-Coat Adhesion Promoter for blend areas



Surface Preparation

For application over a properly prepared basecoat:

- Mask the entire vehicle to protect from overspray.
- Allow basecoat to dry 15 - 30 minutes prior to clearcoat application.
- Extend basecoat dry time to 30 minutes when applying several base color coats, tri-coat colors, or in cooler shop conditions.



Gun Setups* 4.2 VOC

Conventional

Gravity Feed 1.3 mm - 1.6 mm (.051" - .063")(c)

Siphon Feed 1.4 mm - 1.8 mm (.055" - .070")

HVLP

1.3 mm - 1.4 mm (.051" - .055")

(c) 1.5 - 1.6 mm DeVilbiss and 1.4 SATA



Air Pressure* 4.2 VOC

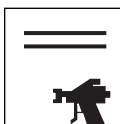
Conventional

35 - 45 psi @ the gun

HVLP

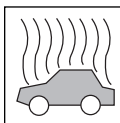
6 - 10 psi @ the gun cap

*The listed setups cover the usual range for various application equipment. For information on specific manufacturers' equipment, see the Appendix section titled "Equipment Information."



Application

Apply 2 medium-wet coats.



Flash/Dry Times

Do not use IR heat. It may cause the clearcoat to solvent pop.

Force Dry

Flash between coats:	8 - 12 minutes
Flash before Force Dry:	none
Cycle Time:	10-15 minutes X 160° F (booth temperature) (a)
Dust Free:	out of force dry
Time to Handle (Assemble):	when cool
Time to Polish:	when cool
Time to Stripe:	when cool
Time to Deliver:	when cool
Time to Decal:	24 - 48 hours

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(a) Beware: When competitors claim (15 min x 160° F), they typically refer to time at substrate temperature. This actually translates into a 25-30 min. bake cycle at 170-180° F booth temperature setting (this means more time, and higher energy costs than G2-4500S™)

Examples for optimum bake cycles:

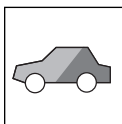
Total Bake Cycle	Booth Temp (° F) (not substrate temp.)
15 min.	160° F
13 min	180° F
5 - 10 min.	199° F

Note: If immediate delivery is not required, it is possible to reduce energy costs even further by performing a very short bake to get the clear dust free [5 min.(cycle time) x 160° F (booth temp.)]. Using this process it is possible to sand the clear to remove dirt within 1 hour if needed (if the ambient temp. is above 75° F).

Air Dry @ 70° F	Air Dry	Air Dry (with MasterTint® 389S™)
Flash between Coats:	8 - 12 minutes	8 - 12 minutes
Dust Free:	15-30 minutes	15 - 25 minutes
Time to Handle (Assemble):	3 - 5 hours	2 - 4 hours
Time to Polish:	3 - 5 hours	2 - 4 hours
Time to Stripe:	3 - 5 hours	2 - 4 hours
Time to Deliver:	3 - 5 hours	2 - 4 hours
Time to Decal:	24 - 48 hours	24 - 48 hours

Examples for Air Dry times to buff versus temperature:

	ChromaClear® G2-4507S™	ChromaClear® G2-4509S™
70° F	3 hours	5 hours
80° F	2 hours	3.5 hours
90° F	1 hour	2.5 hours



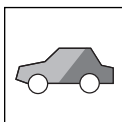
Blending

Panel repair is the approved procedure for clearcoat warranty repairs. This allows the refinisher to attain the recommended film builds. If the refinisher chooses to blend, use DuPont ChromaSystem 19301S™ Blender. Since this blender is higher solids, it is crucial to maintain air pressure (20 - 25 psi) when using this versus a blender like ChromaClear® 7601S™ Blender where air pressure is typically reduced (10 - 15 psi) during application.

- Carefully taper the second coat of clear beyond the first.
- After the final coat of clearcoat, step-out the coating by mixing 1 part DuPont ChromaSystem 19301S™ Blender to 1 part of the remaining clearcoat and taper the blend with the resulting mixture.
- After the final coat of clear has been blended with the mixture of DuPont ChromaSystem 19301S™ and clearcoat, further reduce the mixture and use the same gun to finish melting-in the edge.

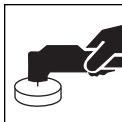
Tips for Success

For sail panel blending, be sure DuPont 222S™ is applied beyond the intended clearcoat area.



Recoatability/Re-repair

Clearcoat may be recoated during any stage of dry or cure. If recoating after 24 hours, scuff sand with 1200 - 1500 grit.



Polishing

Optimum Times

Force Dry:	After cool down
Air Dry:	3-5 hours

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Sanding, Compounding, Polishing

The optimum technique for removing dirt is as follows:

1. Sanding:

■ Sand with 1500 grit wet or finer or use a foam interface pad with P1500 DA or finer.

2. Compounding:

■ Apply a ribbon of rubbing compound to the area that was sanded or contains sandscratches.

■ Maintain air polisher or variable speed buffer at 1400 - 1800 rpm. Remove excess finishing compound with a clean soft cloth prior to applying finishing polish.

■ Use a wool pad and an effective rubbing compound (e.g., 3M Perfect-it II).

■ (Less favorable: Foam pad and 3M Extra Cut Perfect-it III rubbing compound. Further, if a foam pad is used, it will not remove sandscratches as easily.

■ (If reduction in hardness is desired, add 1 - 2 oz Plas-Stick® 2350S™ Flexible Additive or 1 - 2 oz DuPont 19379S™ Application Enhancer per ready-to-spray to moderate hardness.

3. Polishing:

■ Apply a ribbon of polishing material to the area to be polished.

■ Maintain a variable speed buffer or an orbital polisher at 1400 - 1800 rpm.

■ Use a foam pad and an effective polishing compound. Keep the polisher/buffer moving at all times. Overlap each pass approximately 50%. As finishing polish begins to dry, stop polishing. Wipe off excess finishing polish with a clean soft cloth.

■ Hand buff with a clean soft cloth as a finishing touch.

Tips for Success

■ Always use clean water to wet sand and add a few drops of soap to help clear the paper.

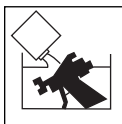
■ Always use a foam interface pad when DA sanding.

■ Do not use medium to heavy-duty compounds. Use clean cloths and pads to insure that the clear does not get scratched with dirt particles from old or re-used cloths or pads.

■ Do not wax for the first 120 days after painting.

Cleanup

Clean spray equipment immediately with DuPont Lacquer Thinner.



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Physical Properties

@ 4.2 lbs./gals. VOC RTS

Theoretical Coverage:	655 sq. ft. per ready-to-spray gallon at 1 mil
Weight Solids:	47.6% ready-to-spray
Volume Solids:	40.86% ready-to-spray
Recommended Dry Film Thickness:	2.0 - 2.4 mils in 2 coats
Flash Point:	See MSDS

VOC Regulated Areas

These directions refer to the use of products which may be restricted or require special mixing instructions in VOC regulated areas. Follow mixing and usage recommendations in the VOC Compliant Products Chart for your area.

Safety and Handling

WEAR A POSITIVE-PRESSURE, SUPPLIED-AIR RESPIRATOR (NIOSH APPROVED TC-19C), EYE PROTECTION, GLOVES AND PROTECTIVE CLOTHING WHILE MIXING ACTIVATOR WITH PAINT, DURING APPLICATION AND UNTIL ALL VAPORS AND SPRAY MIST ARE EXHAUSTED. Follow respirator manufacturer's directions for respirator use. INDIVIDUALS WITH HISTORY OF LUNG OR BREATHING PROBLEMS OR PRIOR REACTION TO ISOCYANATES SHOULD NOT USE OR BE EXPOSED TO VAPOR OR SPRAY MIST. Do not permit anyone without protection in the painting area.

