DuPont Automotive Finishes

DuPont™ ChromaClear® 4500S™ UltraProductive

Description

ChromaClear® 4500S™ boosts throughput and saves energy with a short 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 it offers excellent application, buffability and appearance under bake or air-dry processing conditions. ChromaClear® 4500S™ Clearcoat can be used over DuPont ChromaSystem™ Basecoats. It can be used with ChromaPremier® Reducers to obtain 4.2 lbs./gal. VOC

General Information

Components

ChromaClear® 4500S™ Clearcoat
ChromaClear® 4505S™ Low Temp. Activator
ChromaClear® 4507S™ Regular and High Temp Activator

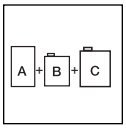
Reducers for 4.2 lbs./gal. VOC:

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	12365S™	12365S™	12375S™	12375S™
Multi-Panel	12365S™	12375S™	12385S™	12385S™
Overall	12375S™	12385S™	12385S™	12395S™

Tips for Success

For optimum appearance it is important to choose the correct ChromaPremier® reducer for the temperature range (see above). Also, allow the sealer to flash for 20 min. before applying basecoat to ensure solvent release. If application enhancement is desired, 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® 4500S™	3	548 grams
ChromaClear® 4505S™ or 4507S™ Activator	1	749 grams
ChromaPremier® 12375S™ Med. Reducer	1	909 grams

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

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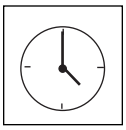
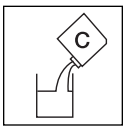
Viscosity
15 - 17 seconds in a Zahn #2 (DuPont M-222) cup.

Tips for Success
Use mixing stick for accurate measurements.



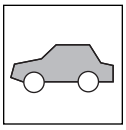
Pot Life
1.5 hours at 70°F



Additives

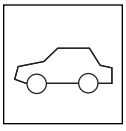
Accelerator:	Use 1/2 ounce MasterTint® 389S™ per ready-to-spray quart. Use of accelerator under force dry (bake) conditions may lead to dieback.
Fish Eye Eliminator:	DuPont 459S™; use 1/4 - 1/2 ounce per ready-to-spray quart.
Retarder:	DuPont 19379S™ Application Enhancer
Flex Additive:	Add 2 oz. Plas-Stick® 2350S™ per ready-to-spray quart of clearcoat or Use Plas-Stick® 2350S™ as described below.

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



Basecoats
ChromaBase®
ChromaPremier®

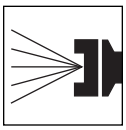
Application



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

Surface Preparation
For application over a properly prepared basecoat:
- Mask the entire vehicle to prevent overspray from sticking.
- 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	1.3 mm - 1.6 mm (.051” - .063”)
	Siphon	1.4 mm - 1.8 mm (.055” - .070”)
HVLP		1.3 mm - 1.4 mm (.051” - .055”)



Air Pressure	**4.2 VOC**	
Conventional		35 - 45 psi @ the gun
HVLP		6 - 10 psi @ the gun cap

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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:	0 minutes
Cycle Time:	10-15 minutes X 160°F (booth temperature)*
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

*Examples for optimum bake cycles:

Bake Cycle	Temp (°F)
15 min.	160 °F
13 min	180 °F
5 - 10 min.	199 °F

*It is also possible to reduce energy costs 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	Without Accelerator	with MasterTint® 389S™
Flash between Coats:	8 - 12 minutes	8 - 12 minutes
Dust Free:	15-30 minutes	15 - 25 minutes (4.2 VOC)
Time to Handle (Assemble):	4 - 6 hours	4 - 6 hours
Time to Polish:	4 - 6 hours	4 hours
Time to Stripe:	4 - 6 hours	4 - 6 hours
Time to Deliver:	4 - 6 hours	4 - 6 hours
Time to Decal:	48 - 72 hours	48 - 72 hours

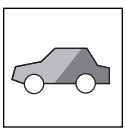
Examples for Air Dry times to buff versus temp.

ChromaClear® 4505S™

Temp	Time to Polish
70°F	4 hours
85°F	2 hours
90°F	1.5 hours

ChromaClear® 4507S™

Temp	Time to Polish
70°F	4 hours
85°F	2.5 hours
90°F	1.5 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™ 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.

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Tips for Success

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

Recoatability/Re-repair

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

Sanding, Compounding, Polishing

Optimum Times

Force Dry:	After cool down
Air Dry:	4 hours

Sanding

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

Compounding

Use finishing compound. Apply a thin ribbon of material to the area to be polished. Use a double-sided *wool* polishing pad. Maintain air polisher or variable speed buffer at 1800 - 3000 rpm. Remove excess finishing compound with a clean soft cloth prior to applying finishing polish.

If you can only use a foam pad, try a 3M white foam pad and use 3M Extra Cut Perfect-it III rubbing compound. Further, if you would like the clear to be softer, add 1 -2 oz Plas-Stick® 2350S™ Flexible Additive or 1 - 2 oz DuPont 19379S™ Application Enhancer per ready-to-spray to moderate hardness.

Polishing

Use finishing polish (shake well before using). Apply a ribbon of material to work a 2 - 3 foot square area. Use a foam pad or a terry cloth cover. Maintain a variable speed buffer or an orbital polisher at 1200 - 1800 rpm. 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.*

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Physical Properties	@ 4.2 lbs./gal. VOC
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
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.