



Basecoat/Clearcoat Composite Calculations 3.5 VOC and 4.5 VOC Limit

P-175 BC/CC

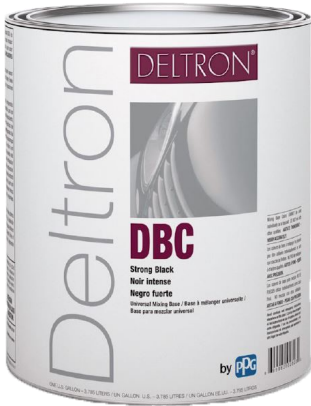
DBC/DBI

PPG's DELTRON® 2000 (DBC) Basecoat is a state-of-the-art, premium quality basecoat/clearcoat system designed to provide outstanding color match for today's OEM finishes. DBC Basecoat is easy to spray and performs well in all shop environments.

Deltron 2000 (DBI) Interior color was developed for interior and underhood color matching purposes. It is mixed directly from the *Deltron* Mixing System.

DBI must be reduced with the appropriate DT Reducer and does not require clearcoat.

This bulletin addresses the VOC of the BC/CC system as determined by BC/CC composite calculation where the VOC system = (VOC BC + VOC CC)/3 (as specifically required by air quality regulations).



Features & Benefits

- Available in Domestic & Import Colors
- Fast drying
- Process efficiency

Compatible Surfaces

- DBC/DBI may be applied over:
- Cleaned and sanded OEM finishes
 - DPLV 2.1 VOC Epoxy Primer
 - NCP280 2.1 VOC Primer Surfacer
 - SU4903 Advanced Plastic Bond (see OC-1)
 - SUA4903 Advanced Plastic Bond Aerosol (see OC-1)
- Surface must be sealed when topcoating with black DBC/DBI.
 - For use with other PPG products, please refer to the specific product bulletin for over/under compatibilities.

Required Products

Reducers

- DT860 Cool Temperature 60-70°F (16-21°C)
- DT870 Medium Temperature 65-80°F (18-27°C)
- DT885 Warm Temperature 75-90°F (24-32°C)
- DT895 Hot Temperature 85°F (29°C) and above
- DT898 Hot Temperature 95°F (35°C) and above

Deltron



DBC/DBI

Surface Preparation:



DBC

- Wash painted surfaces thoroughly with soap and water to remove water-soluble contaminants. Then clean with appropriate PPG cleaner.
- Sand with 400-600 grit sandpaper or equivalent.
- Re-clean with appropriate PPG cleaner and prime or seal as needed.



DBI (Interior):

- Wash the area to be painted with soap and water. Then clean with the appropriate PPG cleaner.
- Lightly scuff with 400-600 grit sandpaper or equivalent.
- Re-clean with PPG cleaner
- Final wipe with DX103 MULTI-PREP™



Bare plastic or rubber parts (DBC or DBI)

- Refer to product bulletin for *Deltron* or *OneChoice* Plastic Adhesion Promoter.

Mix Ratio for 3.5 and 4.5 VOC BC/CC Regulated Areas:



DBC Colors:

Reduce DBC color 100% with the DT Reducer best suited to shop temperature and size of job. Then add 5% DX57 to RTS (1.6 oz./RTS quart).

DBC	:	DT8xx Reducer	:	DX57
1	:	1	:	5% per RTS

*Must be sealed when topcoating with Black DBC/DBI



DBI (Interior):

Reduce DBI color 50-100% with the DT Reducer best suited to shop temperature and size of job.

DBC	:	DT8xx Reducer
1	:	½-1



Pot Life:

2 hours at 70°F (21°C) for DBC Color
No pot life for the DBI Interior mixture

Additives:



DX57 Basecoat Activator: 5% to RTS quart

DX57 is required in all layers of DBC for compliance with 3.5 VOC BC/CC regulations. See Mix Ratio Section of this Bulletin.

DBC/DBI does not require a flexible additive.

Air Pressure and Spraygun Setup:



HVLP:

8-10 psi at the air cap

Compliant:


29-40 psi at the gun




Gun Setup:

1.2-1.4 mm or equivalent

Note: For best overall results, refer to spraygun manufacturer's recommendations for inlet air pressures.

DBC/DBI

Application:		Apply:	2-3 coats or until proper color is achieved
		Film build per coat:	0.4 mils

Drying Times:		Between Coats:	<u>DBC/DX57</u> 10-15 minutes at 70°F (21°C)	<u>DBI</u> 5-10 minutes at 70°F (21°C)
		Air Dry:	Dust Free: 10-15 minutes at 70°F (21°C) Tape Free: 30-60 minutes at 70°F (21°C)	5-10 minutes at 70°F (21°C) 20-40 minutes at 70°F (21°C)
		Dry to Clearcoat:	15 minutes at 70°F (21°C) 24 hours maximum to clearcoat	15 minutes at 70°F (21°C) 24 hours maximum to clearcoat

If the basecoat color is allowed to dry more than 24 hours, it must be scuffed and new basecoat color applied.

Striping or Two Toning:

Tape time of DBC/DBI is 20-40 minutes at 70°F (21°C) and 50% relative humidity. All striping, two toning and clearcoating must be completed within 24 hours. If allowed to dry for more than 24 hours, the DBC Colors must be sanded and reapplied. Avoid thick films of DBC.

Clearcoating: **System VOC - for a maximum applied VOC limit of 4.5 lbs/gal for the Multi Stage BC/CC system**
Use this chart to determine the maximum VOC of the selected clearcoat that can be used with your basecoat VOC to meet the 4.5 limit. VOC calculations are based on worst-case scenarios of the RTS mixed color and solvents. Verify VOC calculations if deviating from the chart.
Note: Special blend ratio may be required for groundcoat and midcoat in tri-coat systems for VOC compliance (see basecoat TDS)
Note: If Multi-Stage VOC calculation is above 4.5 lbs/gal due to VOC of RTS basecoat, you MUST choose lower VOC clearcoat or use basecoat TDS special blend option.

3.5 VOC BC/CC		4.5 VOC BC/CC	
Basecoat VOC	Use Max Clearcoat VOC	Basecoat VOC	Use Max Clearcoat VOC
6.6	1.9	6.6	3.4
6.4	2.0	6.4	3.5
6.2	2.1	6.2	3.6
6.0	2.2	6.0	3.7
5.8	2.3	5.8	3.8
5.6	2.4	5.6	3.9

Compatible Clearcoats	3.5 VOC Limit DC4010 <i>Deltron</i> Velocity Premium Clear LV EC5XX <i>Envirobase En-V</i> Clearcoats	4.5 VOC Limit DC4010 <i>Deltron</i> Velocity Premium Clear LV DCU2042 Low VOC Speed Clear with DT1845 / DT1850 / DT1855 EC5XX <i>Envirobase En-V</i> Clearcoats
		Over tri-coats use a clearcoat with a RTS VOC of 2.4 lbs/US Gal or less

Equipment Cleaning: Spray guns, gun cups, storage pots, etc., should be cleaned thoroughly after each use with any appropriate PPG general purpose solvent.

DBC/DBI

Technical Data:			
	DBC with DX57		DBI (no DX57)
Volume Ratio	1 : 1 : 0.1		1 : 0.5-1.0
Package VOC Regulatory (Less Water, Less Exempts) g/L	623-738		623-738
Package VOC Regulatory (Less Water, Less Exempts) lbs./ US Gal	5.20-6.16		5.20-6.16
RTS Ratio VOC Regulatory (Less Water, Less Exempts) g/L	683-762		695-791
RTS Ratio VOC Regulatory (Less Water, Less Exempts) lbs./ US Gal	5.70-6.36		5.80-6.60
Total Solids by Weight (RTS)	14-33%		9-31%
Total Solids by Volume (RTS)	10-18%		7-15%
Sq. Ft. Coverage / US Gallon (RTS)/ 1 mil / 100% Transfer Efficiency	160-289		112-241
The VOC of the 2 Stage BC/CC (Multi-stage) system is found by BC/CC composite calculation, where the $VOC_{sys} = (VOC_{bc} + 2VOC_{cc}) / 3$.			
Clearcoat VOC Product Ranges	BC/CC 3.5 VOC lbs. US gal	BC/CC 4.5 lbs. US gal	Tri-Coats
DC4010 Deltron Velocity Premium Clear LV	1.83-2.04	1.83-2.04	1.83-2.04
EC5XX Envirobase En-V Clearcoats	0.61-2.08	0.61-2.08	0.61-2.08
EC5XX Envirobase En-V Clearcoats (NR)	X	1.79-3.0	X
DCU2042 Low VOC Speed Clear with DT1845, DT1850 or DT1855	X	3.5	X
	Must use calculation for tri-coats.	Over tri-coats use a clearcoat with a RTS VOC of 2.4 lbs/US Gal or less	Tri-Coat Calculation: $VOC_{sys} = (VOC_{bc} + VOC_{mc} + 2VOC_{cc}) / 4$

See Safety Data Sheet and Labels for additional safety information and handling instructions.

Important: The contents of this package must be blended with other components before the product can be used. Before opening the packages, be sure you understand the warning messages on the labels of all components since the mixture will have the hazards of all its parts. Improper spray technique may result in a hazardous condition. Follow spray equipment manufacturer's instructions to prevent personal injury or fire. Follow directions for respirator use. Wear eye and skin protection. Observe all applicable precautions.

EMERGENCY MEDICAL OR SPILL CONTROL INFORMATION (412) 434-4515; IN CANADA (514) 645-1320

Materials described are designed for application by professional, trained personnel using proper equipment and are not intended for sale to the public. Products mentioned may be hazardous and should only be used according to direction, while observing precautions and warning statements listed on label. Statements and methods described are based upon the best information and practices known to PPG Industries. Procedures for applications mentioned are suggestions only and are not to be construed as representations or warranties as to performance, results, or fitness for any intended use, nor does PPG Industries warrant freedom from patent infringement in the use of any formula or process set forth herein.

PPG Automotive Refinish
19699 Progress Drive
Strongsville, OH 44149
800.647.6050

PPG Canada Inc.
2301 Royal Windsor Drive, Unit #6
Mississauga, Ontario L5J 1K5
888.310.4762

Follow us online:
www.ppgrefinish.com

