

2.1 VOC Urethane Clearcoat

ESC621

DELFLLEET ESSENTIAL[®] ESC621 is a cost-effective 2.1 VOC acrylic urethane clearcoat that delivers good gloss, DOI and buffability, while providing an added layer of durability and protection from the environment. There are four reduction options for temperature control. Additionally, ESC621 may be used as an integrated clear in ESSS single stage colors.

Additional Products

- | | |
|---------------------------------|--------|
| • Urethane Clear | ESC621 |
| • Hardener | ESH200 |
| • Activator – Cold Weather | ESX711 |
| • Activator - Standard | ESX721 |
| • Exempt Reducer | ESR300 |
| • Exempt Reducer – Warm Weather | ESR310 |

Compatible Surfaces

ESC621 may be applied over:

- ESSS Single Stage Color
- ESSS Base Coat Color

ESC621 may be integrated into (mixed with): ESSS Single Stage Color

Selection Of Substrate Cleaner - ONECHOICE[®] Commercial CFX Cleaners

Code	Product	Purpose
CFX435LV	Low VOC Cleaner	Compliant cleaner suitable for removing dirt, grease or other contaminants before or during the painting process
CFX436	Wax & Grease Remover	Suitable for removing dirt, grease or other contaminants before or during the painting process
CFX437	Heavy Duty Wax & Grease Remover	Used to remove heavy milling oils and grease from bare substrates prior to the painting process



Application Guide

Preparation:

When specific activators are used in the color coat, the clearcoat must be applied **after the minimum** time shown below:



Tables for ESC621 data sheet. Required Dry Times for Clearcoating ESSS:

Activator used in ESSS	Minimum time before Clearcoat	Maximum time before Clearcoat
ESX500/ESX510	30 minutes	3 hours
ESX520	30 minutes	16 hours
ESX530	3 hours	72 hours
ESX540	CAN NOT BE CLEARCOATED	

ESSS Base Coat

- 30 minutes to 72 hours @ 70°F (21°C)
- Refer to DFE-21 for further information

If the maximum time has expired the color must be sanded before the clear is applied.

Mixing Ratio:



4 : **ESC621**
1 : **ESH200**
1 to 2 : **ESX7XX or ESR3XX**
Speed from fastest to slowest:
ESX711>ESX721>ESR300>ESR310

Pot Life:

Pot life of this product is variable depending on temperature and on activator choice.

At 70°F (21°C), pot life ranges from 1 hour with ESX711 to 7 hours with ESR310.



Activator	Pot Life
ESX711	1 hour
ESX721	2 hours
ESR300	6 hours
ESR310	7 hours

NOTE: Heat shortens pot life of this material.

Spray Viscosity:



#2 EZ-Zahn: 17 - 23 seconds

Additives:



N/A

Number Of Coats:



2 - 3 coats as an overlay clear
1 - 2 coats as an integrated clear in ESSS Single Stage only

Film Build:

Film Build:	Wet Film (per coat)	Dry Film (total)
Minimum	2.25 mils	1.6 mils
Maximum	3.75 mils	4.0 mils

Flash Times:



Between Coats 5 - 10 minutes @ 70°F (21°C)

Dry Times:



Between Coats: 5 - 10 minutes
20 - 50 minutes @ 70°F (21°C)



To Touch: 90 minutes to 4 hours @ 70°F (21°C)



To Handle: 5 hours @ 70°F (21°C)



Tape Time: (21°C)
Force Dry: 30 minutes @ 140°F (60°C)



IR (Infrared):
short wave 12 - 15 minutes




Polishing: 16 hours @ 70°F (21°C)
Air Dry (21°C)
Force Dry 2 hours (after cool down)

Repair and Recoat: 8 hours minimum

After 6 hours, sand ESC621 with 600 grit (wet or dry) before applying another coat


Note: Force drying times are for quoted surface temperature. Additional time should be allowed in the force-drying schedule to allow surface to reach recommended temperature.

Application Guide (Continued)

Spray Gun Setup:		HVLP	COMPLIANT		
	Fluid Tip	1.1- 1.4 mm or equivalent	1.3 - 1.7 mm or equivalent	Square Foot Coverage (RTS US Gal 100% Transfer Efficiency)	581 – 679 sq. ft. per gal @ 1 mil dry
	Air Pressure	10 PSI at the air cap max	35-45 PSI at the gun	Square Foot Coverage as Integrated Clear (RTS US Gal 100% Transfer Efficiency)	671 – 849 sq. ft. per gal @ 1 mil dry

Consult the Fleet Training Manual TRN90 Spray Equipment section for additional gun set-up requirements.

Pressure Pot Setup: Starting setup, adjust from here for best results

		HVLP	COMPLIANT		
	Fluid Tip	1.0 – 1.3 mm with 8-12 fluid ounces per minute	1.0 – 1.3 mm with 8-12 fluid ounces per minute	Fluid Delivery	8-12 fluid ounces per minute
					8-12 fluid ounces per minute

Clearcoating Option as an Integrated Clear:

- ESSS ready-to-spray Single Stage (only) may be mixed with ready-to-spray ESC621 clear prior to applying the final coat of color. “33-50% of RTS ESC621 may be added to RTS Single Stage color”, i.e. mix 2 parts of ready-to-spray ESSS with up to 1 part of ready-to-spray ESC621 clearcoat.
- When adding up to the maximum 50% by volume of ready-to-spray ESC621 to ready-to-spray ESSS Single Stage, the ready-to-spray VOC of the final paint is less than 2.6 lbs/gal.
- Note: Use of ESC621 as an integrated clear in metallic colors may result in a color shift.

RTS Combinations:	ESC621 w/ ESH200 & ESX711/721 or ESR300/ESR310	ESC621 w/ ESH200 & ESX711/721 or ESR300/ESR310	Integrated Clear in ESSS Single Stage 2 parts RTS ESSS : up to 1 part RTS ESC621
Volume Ratio	4 : 1 : 1	4 : 1 : 2	As is
Weight Solids	43.8 - 44.8%	36.93 – 38.40%	45.72 – 70.24%
Volume Solids	42.3%	36.25 – 36.33%	41.87 – 52.94%
VOC per gallon of solids	2.84 (lbs)	2.84 – 2.85 (lbs)	3.22 – 3.85 (lbs)
Applicable Use Category	Clear Coating	Clear Coating	Uniform Finish Coating
VOC Actual	144 (g/L)	124 (g/L)	170 226 (g/L)
VOC Actual	1.2 (lbs/gal)	1.03 (lbs/gal)	1.42 – 1.88 (lbs/gal)
VOC Regulatory (less water less exempt)	245 (g/L)	245 (g/L)	268 - 289 (g/L)
VOC Regulatory (less water less exempt)	2.04 (lbs/gal)	2.04 (lbs/gal)	2.24 – 2.41 (lbs/gal)
Density	1054 - 1077 (g/L)	1056 - 1095 (g/L)	1015 - 1503 (g/L)
Density	8.8 - 8.99 (lbs/gal)	8.81 – 9.14 (lbs/gal)	8.48 – 12.54 (lbs/gal)
Volatiles wt.	55.2 - 56.2%	61.60 – 63.07%	29.76 – 54.28%
Water wt.	0.1%	0.06 – 0.09%	0.03 - 0.21%
Exempt wt.	41.48 – 42.74%	49.81 – 51.72%	14.55 – 37.65%
Water vol.	0.1%	0.07 – 0.10%	0.04 - 0.22%
Exempt vol.	40.94 – 40.98%	49.25 – 49.40%	20.23 – 37.66%

Application Guide (Continued)**Additional Volume Solids, Weight Solids and Square Foot Coverage information**

Overlay Clear	RTS w/ESX721	RTS w/ESX711	RTS w/ESR300	RTS w/ESR310	Overall range
Volume Solids	42.3%	42.3%	42.3%	42.3%	42.0% - 42.5%
Weight Solids	44.5%	44.8%	44.8%	43.8%	43.5% - 45.0%
Square Foot Coverage	678.5 sq ft	678.9 sq ft	678.2 sq ft	678.2 sq ft	675 sq ft – 680 sq ft

Integrated Clear (2 parts color, 1 part clear)	Overall range
Volume Solids	45.4% – 49.4%
Weight Solids	50.1% – 58.1%
Square Foot Coverage	735 sq ft – 800 sq ft

Health and Safety:

Safety Data Sheets (SDS) for the PPG products mentioned in this publication are available through www.ppgcommercialcoatings.com (Safety, SDS Search) or your PPG Distributor.

For additional information regarding this product, see the SDS and LABEL information.

EMERGENCY MEDICAL OR SPILL CONTROL INFORMATION (412) 434-4515; IN CANADA (514) 645-1320 AND IN MEXICO 01-800-00-21-400.

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PPG Industries
Commercial Coatings
19699 Progress Drive
Strongsville, OH 44149
1-800-647-6050

PPG Canada Inc.
2301 Royal Windsor Drive, Unit #6
Mississauga, Ontario L5J 1K5
1-888-310-4762