

Product Data Sheet

September 2006

**INTERNATIONAL MASTER
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V0120

Turbo Plus™ P488-Line

Product	Description
P488-	<i>Turbo Plus Mixing basics and Ready Mixed Finish</i>
P273-1083	<i>Turbo Plus Adjuster</i>
P210-820	<i>Turbo Plus Extra Slow MS Hardener</i>
P210-821	<i>Turbo Plus Slow MS Hardener</i>
P210-822	<i>Turbo Plus Medium MS Hardener</i>
P275-255	<i>Turbo Plus Express</i>
P275-444	<i>Turbo Plus Rapide</i>
P850-1390	<i>Turbo Plus Extra Slow Thinner</i>
P850-1391	<i>Turbo Plus Slow Thinner</i>
P850-1392	<i>Turbo Plus Medium Thinner</i>
P850-1393	<i>Turbo Plus Fast Thinner</i>
P491-1000	<i>Turbo Plus Aluminium</i>
P565-98	<i>Turbo Plus Matting Agent</i>
P100-2020	<i>Flexible Additive for Plastics</i>

Product Description

Turbo Plus is a fast, versatile 2-pack acrylic paint system designed exclusively for painting commercial vehicles. Turbo Plus gives a finish of outstanding gloss and durability, which fully meets the highest standards demanded by fleet operators today. Turbo Plus offers Commercial Vehicle painters unrivalled flexibility and easy application with a range of undercoats specially developed for painting all surfaces commonly found on commercial vehicles. There is a choice of MS hardeners and thinners so any size of vehicle can be sprayed to optimum appearance.



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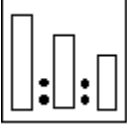







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Process

		HVLP and Conventional Application	
		Standard Process	Higher Build Process
		Turbo Plus P488- 3 parts Turbo Plus MS Hardener 1 part Turbo Plus Thinner 1 part	Turbo Plus P488- 3 parts Turbo Plus MS Hardener 1 part Turbo Plus Thinner 0.5 part
		Pot Life at 20°C : 4-6 hours Clean gun immediately after use.	Pot Life at 20°C : 3-5 hours Clean gun immediately after use.
		16-18 secs DIN4 (20-22 secs BSB4) at 20°C	19-21 secs DIN4 (25-27 secs BSB4) at 20°C
		1.4-1.8 mm 3.3-4.3 bar (50-65 psi)	1.4-1.8 mm 3.3-4.3 bar (50-65 psi)
		1.0-1.4 mm Air cap pressure : 0.675 bar (10 psi maximum)	1.0-1.4 mm Air cap pressure : 0.675 bar (10 psi maximum)
		2-3 single coats 40-50 microns (1.5-2.0 thou)	2 single coats 40-50 microns (1.5-2.0 thou)
		10 minutes minimum between coats	10 minutes minimum between coats
		Air dry (20°C) : Dust free 20-30 mins Handleable 6 hours Recoat : 16 hours Into-Service : 16 hours Stoving at metal temperature of : 40°C 90 minutes 50°C 1 hour 60°C 30 minutes 70°C 20 minutes Into-Service When cool	Air dry (20°C) : Dust free : 20-30 mins Handleable : 6 hours Recoat : 16 hours Into-Service : 16 hours Stoving at metal temperature of : 40°C 90 minutes 50°C 1 hour 60°C 30 minutes 70°C 20 minutes Into-Service When cool
RECOAT		After "Into-Service" time	After "Into-Service" time

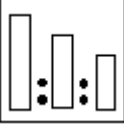




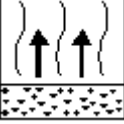

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PROCESS

	Airless Spray	Pressure Pot
	Turbo Plus P488- 3 parts Turbo Plus MS Hardener 1 part Turbo Plus Thinner 0.5 part	Turbo Plus P488- 3 parts Turbo Plus MS Hardener 1 part Turbo Plus Thinner 1 part or 0.5 part
	Pot Life at 20°C : 3-5 hours Clean gun immediately after use.	Pot Life at 20°C : 3-6 hours depending on mixing ratio Clean gun immediately after use.
	19-21 secs DIN4 (21 secs maximum) (25-27 secs BSB4) (27 secs maximum) at 20°C	3:1:1 - 16-18 secs DIN4 (20-22 secs BSB4) or 3:1:0.5 - 19-21 DIN4 (25-27 secs BSB4) at 20°C
	0.22-0.28 mm (9-11 thou) 40-60°C angle 90-120 bar (1350-1800 psi)	1.1-1.4 mm Air cap pressure : 2.7-4.0 bar (40-60 psi) Paint Pressure : 0.3-1.0 bar (5-15 psi)
	1 light and 1 full coat 40-50 microns (1.5-2.0 thou)	2-3 single coats 40-50 microns (1.5-2.0 thou)
	10 minutes minimum between coats and before stoving	10 minutes minimum between coats and before stoving
	Air dry (20°C) : Dust free : 20-30 mins Handleable : 6 hours Into-Service : 16 hours Stoving at metal temperature of : 40°C 90 minutes 50°C 1 hour 60°C 30 minutes 70°C 20 minutes Into-Service : When cool	Air dry (20°C) : Dust free : 20-30 mins Handleable : 6 hours Into-Service : 16 hours Stoving at metal temperature of : 40°C 90 minutes 50°C 1 hour 60°C 30 minutes 70°C 20 minutes Into-Service : When cool
RECOAT	After "Into-Service" times	After "Into-Service" times

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General Process Notes

SUBSTRATES AND PREPARATION

Original finish in sound condition, works primer. Fresh Turbo Plus (overnight dried/stoved) P540-line Fastbuild, P540-51X High build anti-corrosive primer, P540-414 High build anti-corrosive primer, P540-415 Weldable Fastbuild, P565-876/-897 wet-on-wet primers, P580-2100/-350X/-3005 epoxy primers, P565-755 Transparent sealer, P595-line Repaint undercoat, P565-625 Primecoat and P565-767 Chromate-free etch primer.

Where flattening is required the following grades of flattening paper are recommended :

Wet or Dry paper : P600 - P800
Dry machine sanding : P280 - P320

Clean with P850-1378 after flattening. Careful preparation of substrates should be used for colour work where optimum appearance is desired.

For optimum appearance and holdout Turbo Plus is best applied over 2-pack primers.

For more detailed information on the preparation of specific substrates, see Preparation and Pre-treatment PDS Q0100.

COLOUR MIXING

All pigmented paint products should be thoroughly hand-stirred when opened. In addition mixing basics should be stirred for 10 minutes by machine before use. Thereafter mixing basics should be machine stirred twice a day for a maximum of 10 minutes each time.

COLOUR CHECKING

As with all refinish paint systems, a colour check should be carried out before painting the vehicle.

APPLICATION EQUIPMENT INFORMATION

HVLP

The most suitable HVLP gun for the application of Commercial Transport products is the pressure feed system.

Air cap pressure : 0.675 bar (10 psi) maximum
Paint pressure : 0.3-1.0 bar (5-15 psi) maximum
If long fluid lines are used, the paint pressure will need to be increased.

Airless

For airless spraywork the activated paint should not be used above 21 secs DIN4 (27 secs BSB4), (e.g. 3:1:0.5 activation ratio), otherwise cissing of the paint film can occur.

Air assisted airless

Air assisted airless application is not recommended.

DRYING

The drying times quoted are approximate times and will vary depending on drying conditions and film thickness. Poor ventilation, temperatures below 20°C and excessive film thickness will extend the drying times.

Larger vehicles will need extended stoving times to reach the required metal temperature.

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SELECTION OF HARDENERS AND THINNERS

The exact choice of hardener and thinner combination will depend on the gun set up used, air movement, temperature, application conditions, size of job and personal preference.

The Turbo Plus Hardeners and Thinners have been carefully formulated to give a broad spread of application properties, i.e.:-

Medium MS Hardener plus Fast thinner	Medium MS hardener plus medium thinner	Medium MS hardener plus slow thinner	Slow MS hardener plus medium thinner	Slow MS hardener plus slow thinner	Extra slow MS hardener plus extra slow thinner
<i>Ideal for smaller jobs e.g. cabs in cool conditions</i>			Fast air movement		Very slow process for hot conditions
<i>Increasing wetness of application and longer flash-off large jobs etc.</i>					

Depending on job size and temperature any combination of hardener plus thinner can be used.

MIXING RATIOS

For conventional spray two thinning processes are recommended :

Standard Process

For use where optimum flow is required and substrate preparation has been carefully carried out.

Turbo Plus P488-	: 3
Turbo Plus MS Hardener of Choice	: 1
Turbo Plus Thinner of Choice	: 1

Higher Build Process

Ideal for use over structure steel components e.g. chassis or other areas where flow is not so critical. Optimum process for build.

Turbo Plus P488-	: 3
Turbo Plus MS Hardener of Choice	: 1
Turbo Plus Thinner of Choice	: 0.5

SELECTION OF CATALYST

To improve through hardening at low temperatures (below 20°C), Turbo Plus Rapide (P275-444) can be used in combination with the activated and thinned Turbo Plus system. Please refer to the Turbo Plus Rapide PDS for more information.

To reduce low bake drying times Turbo Plus Express P275-255 can be used in combination with the activated and thinned Turbo Plus system. Please refer to the Turbo Plus Express PDS for more information.

REDUCTION OF GLOSS LEVELS

The gloss of Turbo Plus solid colours can be reduced by adding Turbo Plus Matting Agent (P565-98) as follows :-

Finish	Turbo Plus (P488-line)	Matting Agent (P565-98)
Semi-Gloss	3 parts	1 part
Eggshell	2 parts	1 part
Matt	1 part	1 part (max)

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After adding P565-98, activate and thin in the normal way, please refer to the Matting Agent PDS for more information.

P565-98 should be stirred thoroughly before use.

The reduction in gloss levels varies between different colours, substrates, application/drying conditions and film thickness. It is advisable to spray a test panel before use and adjust the level of P565-98 if necessary.

Do **NOT** exceed the stated maximum level of P565-98 addition.

SINGLE LAYER ALUMINIUM

Turbo Plus Aluminium (P491-1000) is a Single Layer Metallic Ready Mix Colour for application by conventional spray only. It should be activated and thinned as follows:

P491-1000	3 parts
Turbo Plus Medium MS Hardener P210-822	1 part
Turbo Plus Medium Thinner P850-1392	2 parts

to achieve an application viscosity of 14-16 secs DIN4 (18-20 secs BSB4)

Apply 2 single coats followed by a light double coat to which 20% extra Turbo Plus Medium Thinner P850-1392 has been added.

SIGNWRITING (BY BRUSH)

Signwriting on Turbo Plus can be carried out using Turbo Plus activated (3:1) with no added thinner. Alternatively, use P383-line EHS Hi-Gloss 383 to which 20-30 mls of Turbo Plus Hardener for each 0.5 litre of P383-line EHS Hi-Gloss 383 colour has been added. It is desirable to signwrite over Turbo Plus within 2 days of its application. Scuff areas before signwriting using Scotch-Brite Ultrafine.

DECAL APPLICATION

Ensure that the paint system is fully cured prior to the application of self adhesive decals. This may take longer than the stated "Into Service" times and will vary according to paint systems used, film thickness, application and drying conditions, type of decal used, etc.

RECTIFICATION

Polishing is not normally required as the Turbo Plus system has a full gloss finish straight from the gun. However, dirt can be removed from the film using P1200 paper or finer, followed by polishing by hand or machine using a fine compound such as P562-64 Medium fine compound and followed with P971-9 Finishing polish. Polishing of Turbo Plus finishes is easiest within 1 day of the "Into-Service" time.

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PAINTING PLASTICS

P100-2020 Flexible additive for plastics should be added to Turbo Plus topcoat, when it is used over flexible plastic substrates.

To paint flexible substrates, apply **Nexa Autocolor** Primers for Plastics. Please refer to PDS Plastics Painting Systems Y0100 for more information. The primed plastic can be topcoated with Turbo Plus mixed with P100-2020. If extra build is required apply the appropriate **Nexa Autocolor** 2-pack undercoat mixed with P100-2020 (please refer to the Flexible Additive PDS for more information) prior to Turbo Plus topcoat.

P100-2020 should be added to Turbo Plus in the following ratios :

Rigid Plastics

Use standard Turbo Plus at the required gloss level.

Flexible Plastics

Mixing ratio :

Turbo Plus 5 parts
 P100-2020 1 part

AFTER adding P100-2020 activate and thin in the normal way.

To reduce gloss levels of Turbo Plus solid colours when painting flexible plastics :

FINISH	Turbo Plus (P488-line)	Flexible additive (P100-2020)	Matting agent (P565-98)
Semi gloss	5	1	2
Eggshell	5	1	3
Matt	5	1	6

AFTER adding P100-2020 and P565-98, activate and thin in the normal way.

Very Flexible Plastics

Mixing ratio :

Turbo Plus 2 parts
 P100-2020 1 part

AFTER adding P100-2020 activate and thin in the normal way.

To reduce gloss levels of Turbo Plus solid colours when painting very flexible plastics :

FINISH	Turbo Plus (P488-line)	Flexible additive (P100-2020)	Matting agent (P565-98)
Semi gloss	2	1	1
Eggshell	2	1	1.5
Matt	2	1	3

AFTER adding P100-2020 and P565-98, activate and thin in the normal way.

Additional Information

1. The addition of P100-2020 to Turbo Plus will extend the drying times.
2. High levels of P565-98 in combination with P100-2020 may result in low opacity with some bright colours. Additional coats or the use of a tinted undercoat may be necessary in these situations.
3. Ensure P565-98 and finished products are stirred thoroughly before use.

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COVERAGE

Approximately 8-12m² per litre of ready for use paint at a dry film thickness of 50 microns (2 thou) depending on thinning ratio used.

OTHER POINTS TO NOTE

Allow finishes to harden thoroughly before subjecting to vehicle washes. This can take a number of weeks if vehicles are air-dried in cold conditions and/or paint film thickness is excessively high.

ELECTROSTATIC APPLICATION

Turbo Plus can be applied electrostatically. Performance is dependent on colour and mixing ratio.

These products are for professional use only, and are not to be used for purposes other than those specified. The information on this TDS is based on present scientific and technical knowledge, and it is the responsibility of the user to take all necessary steps in order to ensure the suitability of the product for the intended purpose.

For Health and Safety information please refer to the material Safety Data Sheet, also available at: http://www.ppg.com/Autocolor_MSDS

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