

LOW VOC Gelcoat CRYSTIC ECOGEL S1 PA:

VOC Emission Report

1 - Machinery and Adjustments

Airless Spray Machine (Matrasur M800) with internal peroxide mixing

Nozzle = 525 (50° - 25/1000e inch)

Pump Pressure = 3,5 Bars

Air Assisted Pressure = 3,0 Bars

2 - Process Parameters

Gelcoat Temperature = 23°C

Ambiente Temperature = 20°C

Gelcoat is sprayed on a flat mould of about 5,0 m²

Peroxide Level = 1,5%

Peroxide Type = MEKP (Butanox M50)

3 - Spray Application Parameters

Datas	Gelcoat CRYSTIC Ecogel S1 PA (Low Voc)	Standard Gelcoat
Spray application time (min)	7	6
Total Time of VOC measurement (min)	70	68
Sprayed Wheight (g)	7450	7552
Cured Weight (g)	6876	5590
Total Loss (g)	574	1962
Loss Rate (%)	7.7	26.0
* During Spray (%)	6.4	22.0
* Between end of Spray and curing (%)	1.3	4.0
Sprayed Area (m ²)	5.1	4.8
Weight Applied (g/m ²)	1461	1573
Weight of gelcoat on Mould (g/m ²)	1348	1165
Flow rate of Machinery (g/min)	1600	1400

4 - VOC emission Parameters

The Styrene measurement have been done by an external laboratoty (COVAIR).

The styrene measurement is given with an accuracy of 15%

The conversion factor of the FID analyser gives 1 mgC/Nm³ corresponds to 1,1 mg/Nm³ of styrene

Datas	Gelcoat CRYSTIC Ecogel S1 PA (Low Voc)	Standard Gelcoat
Flow rate of Extraction (Nm ³ /h)	5485	5485
Spray phase		
Styrene Concentration (mg/Nm ³)	225	622
Styrene Flow Rate (g/h)	1234	3415
End of Spray to Cure		
Styrene Concentration (mg/Nm ³)	61	161
Styrene Flow Rate (g/h)	335	884
Average Emission		
Styrene Flow Rate (g/h)	576	1269
VOC Concentration		
Average Styrene Concentration (ppm)	22.3	54.3

5 - Conclusions

These new tests confirm that Crystic Ecogel S1 PA has a much lower VOC emission for both Dynamic phase (Airless Spary) and static phase (gelation) than a standard gelcoat.

The styrene Flow rate emission has dropped down by 55%

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