

7.26 Coating processes 1: coating of cars, truck cabins, trucks and buses

7.26.1 Coverage

This sector covers the coating of passenger cars, truck cabins, trucks and buses.

7.26.2 Emission sources

Major steps of such processes may include:

- Preliminary cleaning, phosphating, electrophoretic coating (also called electrocoating or electrodeposition);
- Application of primer, curing of primer;
- Application of topcoat(s), curing of topcoat(s);
- Under body sealing and sealing of seams, cavity corrosion protection, and repair painting before assembly.

7.26.3 BAT, Associated Emission Levels (AEL)

BAT AEL are based on STS BREF [1]. Combinations of control measures are derived from discussion with ACEA [2] and correspond to the BAT.

Table 1: Emission sources and selected VOC control measures with associated emission levels for coating processes

Type of installation	Combination of control measures [4]	BAT associated emission levels for VOC [Defined for the following averaging period: yearly for total AEL]
Manufacture of cars (M1, M2)	Electrocoat: water-based (5 wt.-% solvent content) Primer: water-based (8 wt.-% solvent content) - electrostatic application Topcoat : <ul style="list-style-type: none"> - High solid coat (45 wt.-% solvent content) - electrostatic application, and - water-based basecoat (15 wt.-% solvent content) – electrostatic application – and solvent-based clear coat (45 – 55 wt.-% solvent content) - electrostatic application Solvent management plan, recovery of purge solvent	10 – 35 g VOC/m ² or 0.3 kg/body + 8 g/m ² to 1 kg/body + 26 g/m ²
Manufacture of truck cabins (N1, N2, N3)	WB enamels HS clearcoat Improved solvent recovery / solvent	10 – 55 g VOC/m ²

	consumption reduction Oxidation on ovens	
Manufacture of trucks (N1, N2, N3)	WB primer and topcoat for high runners and HS topcoat for special orders Improved solvent recovery / solvent consumption reduction	15 – 50 g VOC/m ²
Manufacture of buses (M3)	Cataphoresis WB enamels HS clearcoat Improved solvent recovery / solvent consumption reduction Oxidation on cataphoresis, mid-layer and enamel ovens	92 – 150 g VOC/m ²
Manufacture of vans	WB enamels HS clearcoat Improved solvent recovery / solvent consumption reduction Oxidation on ovens	15 – 50 g VOC/m ²

The surface area is defined as the total electrophoretic coating area, and the surface area of any parts that might be added in successive phases of the coating process which are coated with the same coatings as those used for the product in question, or the total surface of the total product coated in the installations.

M1: vehicles used for the carriage of passengers and comprising not more than eight seats in addition to the driver's seat.

M2: vehicles used for the carriage of passengers and comprising more than eight seats in addition to the driver's seat, and having a maximum mass not exceeding 5 Mg.

M3: vehicles used for the carriage of passengers and comprising more than eight seats in addition to the driver's seat, and having a maximum mass exceeding 5 Mg.

N1: vehicles used for the carriage of goods and having a maximum mass not exceeding 3.5 Mg.

N2: vehicles used for the carriage of goods and having a maximum mass exceeding 3.5 Mg but not exceeding 12 Mg.

N3: vehicles used for the carriage of goods and having a maximum mass exceeding 12 Mg.

7.26.4 Cost data for emission reduction techniques

Costs are defined in the EGTEI documents "car coating" [3], truck and van coating [4], truck cabin coating [5] and bus coating [6].

For the manufacture of cars, abatement costs corresponding to BAT vary from 11 to 25 k€/tonne of VOC abated. Some techniques have even higher costs.

For the manufacture of trucks and vans, abatement costs vary between 12 k€/t VOC and 22 k€/t VOC abated depending on the associated emission level reached (i.e. Solvent Directive requirements or BAT).

For the manufacture of trucks cabins, abatement costs vary between 21 k€/t VOC and 33 k€/t VOC abated depending on the associated emission level reached (i.e. Solvent Directive requirements or BAT).

For the manufacture of busses, abatement costs vary between 13 k€/t VOC and 23 k€/t VOC abated depending on the associated emission level reached (i.e. Solvent Directive requirements or BAT).

Guidance document on control techniques for emissions of sulphur, NO_x, VOCs, dust from stationary sources

The detailed methodologies used to estimate these costs are defined in EGTEI documents concerning “car coating” [3], “truck coating” [4], “truck cabin coating” [5] and “bus coating” [6].

Caution: these documents are susceptible to evolve if new updated data are available.

7.26.5 Emerging techniques

No quantitative data is available.

7.26.6 References used for chapter 7.26

[1] STS BREF – August 2007

[2] Internal meeting ACEA / EGTEI – July 2006

[3] EGTEI background document/synopsis sheet: Car coating – 2003/2005

[4] EGTEI background document/synopsis sheet: Truck coating – 2003/2005

[5] EGTEI background document/synopsis sheet: Truck cabin coating – 2003/2005

[6] EGTEI background document/synopsis sheet: Bus coating – 2003/2005

