

# 1.A.3.b vii - Road Transport: Automobile Road Abrasion

## Short description

In sub-category *1.A.3.b vii - Road Transport: Automobile Road Abrasion* emissions from road abrasion in Road Transport are reported. Therefore, this sub-category is an important source for a) particle emissions and b) emissions of heavy metals, POPs etc. included in these particles.

| Category Code | Method          |                 |                 |        |    | AD    |     |    |     |      | EF  |     |     |                  |                   |
|---------------|-----------------|-----------------|-----------------|--------|----|-------|-----|----|-----|------|-----|-----|-----|------------------|-------------------|
| 1.A.3.b.vii   | T1, T3          |                 |                 |        |    | NS, M |     |    |     |      | CS  |     |     |                  |                   |
| Key Category  | SO <sub>2</sub> | NO <sub>x</sub> | NH <sub>3</sub> | NM VOC | CO | BC    | Pb  | Hg | Cd  | Diox | PAH | HCB | TSP | PM <sub>10</sub> | PM <sub>2.5</sub> |
| 1.A.3.b.vii   | -               | -               | -               | -      | -  | -     | -/- | -  | -/- | -    | -   | -   | L/- | L/-              | L/-               |

## Methodology

### Activity data

Abrasive emissions from tyre and brake wear are estimated based on vehicle-type specific mileage data. For detailed mileage data, please see [superordinate chapter](#) on abrasive emissions from road vehicles.

### Emission factors

Table 1: Emission factors applied

|                   |         | PCs      | LDVs     | HDVs     | Buses    | Mopeds   | Motorcycles |
|-------------------|---------|----------|----------|----------|----------|----------|-------------|
| BC                | [mg/km] | NA       | NA       | NA       | NA       | NA       | NA          |
| PM <sub>2.5</sub> |         | 4,05     | 4,05     | 20,5     | 20,5     | 1,62     | 1,62        |
| PM <sub>10</sub>  |         | 7,50     | 7,50     | 38,0     | 34,2     | 3,00     | 3,00        |
| TSP               |         | 15,0     | 15,0     | 76,0     | 76,0     | 6,00     | 6,00        |
| Pb                | [µg/km] | 0,00006  | 0,00006  | 0,00031  | 0,00006  | 0,00002  | 0,00002     |
| Hg                |         | NA       | NA       | NA       | NA       | NA       | NA          |
| Cd                |         | 0,000003 | 0,000003 | 0,000016 | 0,000003 | 0,000001 | 0,000001    |
| As                |         | 0,00004  | 0,00004  | 0,00020  | 0,00004  | 0,00002  | 0,00002     |
| Cr                |         | 0,00108  | 0,00108  | 0,00547  | 0,00108  | 0,00043  | 0,00043     |
| Cu                |         | 0,00004  | 0,00004  | 0,00019  | 0,00004  | 0,00001  | 0,00001     |
| Ni                |         | 0,00057  | 0,00057  | 0,00289  | 0,00057  | 0,00023  | 0,00023     |
| Se                |         | NA       | NA       | NA       | NA       | NA       | NA          |
| Zn                |         | 0,00129  | 0,00129  | 0,00654  | 0,00129  | 0,00052  | 0,00052     |

## Discussion of emission trends

Table 2: Outcome of Key Category Analysis

|      |     |                  |                   |
|------|-----|------------------|-------------------|
| for: | TSP | PM <sub>10</sub> | PM <sub>2.5</sub> |
| by:  | L/- | L/-              | L/-               |

### Particulate Matter

(from wear/abrasion only; no fuel combustion included)

Emissions from road abrasion are directly linked to driven mileage. Thus, the overall trend of emissions from road abrasion is similar to the trend for total driven mileage.

## Recalculations

**Activity data** (mileage) have been revised due to the regular revision of the TREMOD model. (see [superordinate chapter](#) ).

However, the biggest changes occur in the tier1 **emission factors** that have been revised during a research study. The variety of old and revised emission factors cannot be compared here in a comprehensible way.



For more information on recalculated emission estimates for Base Year and 2018, please see the pollutant-specific recalculation tables following chapter [8.1 - Recalculations](#).

## Planned improvements

Besides a routine revision of the underlying model, no specific improvements are planned.