

## 2.C.5 - Lead Production

### Short description

Within this NFR sub-category, SO<sub>2</sub>, PM<sub>2.5</sub>, PM<sub>10</sub>, TSP, As, Cd, Hg, Pb, PCDD/F and PCB emissions from the production of lead are reported.

| Category Code | Method          |                 |                 |       |    | AD |    |    |    |      | EF    |     |     |                  |                   |
|---------------|-----------------|-----------------|-----------------|-------|----|----|----|----|----|------|-------|-----|-----|------------------|-------------------|
| 2.C.5         | T1              |                 |                 |       |    | AS |    |    |    |      | D, CS |     |     |                  |                   |
| Key Category  | SO <sub>2</sub> | NO <sub>x</sub> | NH <sub>3</sub> | NMVOC | CO | BC | Pb | Hg | Cd | Diox | PAH   | HCb | TSP | PM <sub>10</sub> | PM <sub>2.5</sub> |
| 2.C.5         | -               | -               | -               | -     | -  | -  | -  | -  | -  | -    | -     | -   | -   | -                | -                 |

### Method

#### Activity data

The yearly production figures were taken from the annual statistical report of the German association for non-ferrous metals [\[Lit. 1\]](#).

#### Emission factors

The emission factors are either default values according to the 2016 EMEP/EEA air pollutant emission inventory guidebook [\[Lit. 2\]](#) or determined in several research projects. For heavy metals (HM), the applied emission factors are derived from [\[Lit. 3\]](#).

Table 1: Tier1 emission factors applied for primary lead production

| Pollutant         | EF       | Unit | Trend    | Source                          |
|-------------------|----------|------|----------|---------------------------------|
| SO <sub>2</sub> , | 2.050    | kg/t | constant |                                 |
| PM <sub>2.5</sub> | 0.0175   | kg/t | falling  |                                 |
| PM <sub>10</sub>  | 0.02125  | kg/t | falling  |                                 |
| TSP               | 0.025    | kg/t | falling  |                                 |
| As                | 0.041179 | g/t  | falling  | NE-K-G <a href="#">[Lit. 3]</a> |
| Cd                | 0.019767 | g/t  | falling  | NE-K-G <a href="#">[Lit. 3]</a> |
| Hg                | 0.324515 | g/t  | falling  | NE-K-G <a href="#">[Lit. 3]</a> |
| Pb                | 4.506295 | g/t  | falling  | NE-K-G <a href="#">[Lit. 3]</a> |
| PCDD/F            | 0.34     | µg/t | falling  |                                 |

Table 2: Tier1 emission factors applied for secondary lead production

| Pollutant         | EF       | Unit | Trend    | Source                          |
|-------------------|----------|------|----------|---------------------------------|
| SO <sub>2</sub> , | 2.050    | kg/t | constant |                                 |
| PM <sub>2.5</sub> | 0.0175   | kg/t | falling  |                                 |
| PM <sub>10</sub>  | 0.02125  | kg/t | falling  |                                 |
| TSP               | 0.025    | kg/t | falling  |                                 |
| As                | 0.041179 | g/t  | falling  | NE-K-G <a href="#">[Lit. 3]</a> |
| Cd                | 0.019767 | g/t  | falling  | NE-K-G <a href="#">[Lit. 3]</a> |
| Hg                | 0.324515 | g/t  | falling  | NE-K-G <a href="#">[Lit. 3]</a> |
| Pb                | 4.506295 | g/t  | falling  | NE-K-G <a href="#">[Lit. 3]</a> |
| Zn                | 0.05     | g/t  | falling  | NE-K-G <a href="#">[Lit. 3]</a> |
| PCB               |          |      |          |                                 |
| PCDD/F            | 0.34     | µg/t | falling  |                                 |

## Recalculations

With activity data and emission factors remaining unrevised, no recalculations have been carried out compared to last year's submission.



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

## Planned improvements

No category-specific improvements are planned.

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## Bibliography

**Lit. 1:** German association for non-ferrous metals (WirtschaftsVereinigung Metalle): Annual statistical report:  
<https://www.wvmetalle.de>

**Lit. 2:** EMEP/EEA, 2016: EMEP/EEA air pollutant emission inventory guidebook 2016, Copenhagen, 2016.

**Lit. 3:** Ökopol, IER, IZT, IfG: Bereitstellung einer qualitätsgesicherten Datengrundlage für die Emissionsberichterstattung zur Umsetzung von internationalen Luftreinhalte- und Klimaschutzvereinbarungen für ausgewählte Industriebranchen  
Teilvorhaben 2: NE-Metallindustrie, Kalkindustrie, Gießereien.