

## 2.C.7.a - Copper Production

### Short description

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

| Method | AD | EF    | Key Category Analysis |
|--------|----|-------|-----------------------|
| T1     | AS | D, CS | L & T: Cd             |

### Methodology

#### 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 2019 EMEP/EEA air pollutant emission inventory guidebook [\[Lit. 2\]](#) or determined in several research projects. The EF for the heavy metals (HM) are taken from a research project [\[Lit. 3\]](#).

Table 1: Tier1 emission factors applied for entire time series

| Pollutant         | EF    | Unit |
|-------------------|-------|------|
| HCB               | 1     | mg/t |
| PCDD/F            | 2.9   | µg/t |
| TSP               | 0.100 | kg/t |
| PM <sub>10</sub>  | 0.085 | kg/t |
| PM <sub>2.5</sub> | 0.07  | kg/t |
| SO <sub>2</sub>   | 3.0   | kg/t |
| As                | 7     | g/t  |
| Cd                | 15    | g/t  |
| Cu                | 57    | g/t  |
| Hg                | 0.031 | g/t  |
| Pb                | 16    | g/t  |

#### Uncertainties

## Recalculations

Recalculations were necessary



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.

## Bibliography

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

**Lit. 2:** 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.