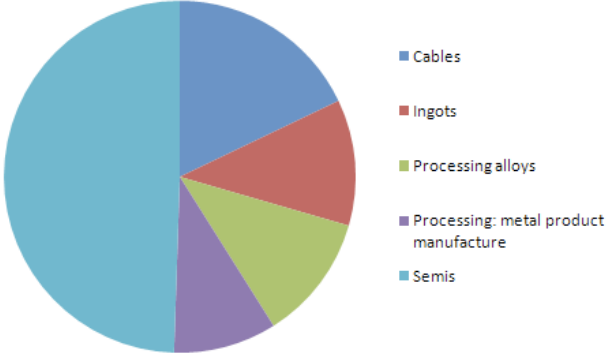
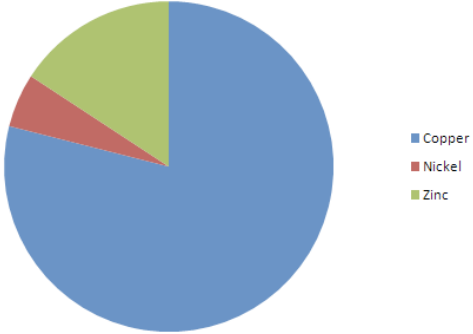


SPERC fact sheet – *Use of massive metal*

| General information | |
|------------------------------|---|
| Title of specific ERC | Use of massive metal in shaping |
| Based on ERC | 12a – Industrial processing of articles with abrasive techniques (low release) |
| Version | 1.2 |
| Scope | Industrial use of massive metal or alloys. This includes production of SEMIS, drawing of cables, production of ingots, shaping of massive metal or alloys. |
| Coverage | <p>Sector representativeness of background data</p>  <p>Metal representativeness of background data</p>  |

| | | |
|---|---|--|
| Narrative description | <p>Semi-finished products are further processed through a variety of mechanical processes to a variety of metal and alloy industrial and consumer products: machining (all processes in which a workpiece is modified by removing unwanted material in the form of turnings with the aim to obtain the desired shape, includes: turning, drilling, countersinking, reaming, planning, shaping, broaching, sawing, filing, rasping and grinding), cold forming, mechanical polishing (mechanical abrasion).</p> <p>Batch annealing where each workpiece is loaded into a furnace for static exposure to heat. Strand annealing where the workpiece passes continuously through the controlled atmosphere.</p> <p>Conform, heating and forming under pressure. Forging, heating of the workpiece; manual or automatic loading of the workpiece into a press containing two halves of a die; closing the dies around the metal to form the desired piece; ejection of workpiece; removal of the excess metal (flash) around the piece.</p> | |
| Substance use rate | Assessment defaults as set by ERC | |
| Other operational conditions | Open and closed systems, wet and dry processes | |
| Environment Parameters for Fate Calculation | <p>Assessment defaults as set by ERC</p> <p>Assumed data for receiving water and for the municipal sewage treatment plant are 18000 m³/d and 2000 m³/d, respectively (resulting dilution factor $q_{DII,SPERC} = 10$). For marine assessments an additional tenfold dilution is assumed</p> | |
| | Typical observed efficiency from background data | Type of RMM |
| Appropriate Risk management measures (RMM) that may be used to achieve required emission reduction | Air: | |
| | 95.00% – >99% | <p>RMMs for air are present in >90% of the sites:</p> <ul style="list-style-type: none"> • Electrostatic precipitation • Fabric or bag filters • Ceramic filters • Wet scrubbers • Dry or semi-dry scrubbers |
| | Water: | |

| | | |
|--------------------------------|---|---|
| | 99.6% (99.30% – 99.80%) | The 50 th percentile or reported site-specific removal efficiency for 4 sites. RMMs for water are present in <90% of the sites: <ul style="list-style-type: none"> • Chemical precipitation (most common) • Sedimentation • Filtration • Electrolysis |
| | Characteristics of specific ERC | Justification |
| Number of emission days | 216 days/year | The minimum of the 10 th percentiles of reported site-specific number of emission days for <ul style="list-style-type: none"> • 17 sites from cable drawing (260 d/yr) • 9 sites from ingots (216 d/yr) • 1 site from processing alloys (235 d/yr) • 9 sites from metal product manufacture (288 d/yr) • 46 sites from Semis production (220 d/yr) |
| Emission fractions | air: 0.02% (release after RMM) | The maximum of the 90 th percentiles of reported site-specific release factors to air for <ul style="list-style-type: none"> • 11 sites from cable drawing (0.002%) • 8 sites from ingots (0.02%) • 11 sites from processing alloys (0.02%) • 6 sites from metal product manufacture (0.0003%) • 24 sites from Semis production (0.002%) |
| | water: 0.01% (release after on-site RMM) | The maximum of the 90 th percentiles of reported site-specific release factors to wastewater for <ul style="list-style-type: none"> • 14 sites from cable drawing (0.0002%) • 9 sites from ingots (0.00009%) • 11 sites from processing alloys (0.003%) • 9 sites from metal product manufacture (0.01%) • 44 sites from Semis production (0.0007%) |
| | soil: n.a. | Assessment default as set by ERC |