|  |  |  |  |
| --- | --- | --- | --- |
| **Process** | **Value** (**per 1 ton of waste)** | | **Ecoinvent dataset and Assumption** (Reinhard et al., 2016) |
| **Input Landfill** | | | |
| Plastic mixture | 468,6 kg | | Overall degradability over 100 years 1%; Short-term emissions to air via landfill gas incineration and landfill leachate. Burdens from treatment of short-term leachate (0-100a) in wastewater treatment plant. Long-term emissions from landfill to groundwater.  *Treatment of waste plastic, mixture, sanitary landfill – (RoW)* |
| Glass | 148,7 kg | | Overall degradability of waste during 100 years: 0%. short-term emissions to air via landfill gas and landfill leachate.  *Treatment of waste glass, sanitary landfill – (GLO)* |
| Paperboard | 104,2 kg | | Overall degradability of waste during 100 years: 32.44%; short-term emissions to air via landfill gas incineration and landfill leachate. Burdens from treatment of short-term leachate (0-100a) in wastewater treatment. Long-term emissions from landfill to groundwater.  *Treatment of waste paperboard, sanitary landfill – (RoW)* |
| Aluminum | 13,9 kg | | Overall degradability of waste during 100 years: 50%; short-term emissions to air via landfill gas incineration and landfill leachate. Burdens from treatment of short-term leachate (0-100a) in wastewater treatment plant. Long-term emissions from landfill to groundwater. Recultivation and monitoring for 150 years after closure.  Treatment of waste aluminum, sanitary landfill – (RoW) |
| Scrap steel | 150,5 kg | | Scrap steel deposition on inert material landfill. No direct emissions from inert material landfill (leachate) are inventoried as deemed negligible. Module contains only exchanges to process-specific burdens (energy, land use) and infrastructure. landfill with renaturation after closure.  Treatment of scrap steel, inert material landfill – (Europe without Switzerland) |
| Wood waste | 86,9 kg | | Overall degradability of waste during 100 years: 1.5%; short-term emissions to air via landfill gas incineration and landfill leachate. Burdens from treatment of short-term leachate (0-100a) in wastewater treatment. Long-term emissions from landfill to groundwater. Treatment of leachate in municipal wastewater treatment plant. Recultivation and monitoring for 150 years after closure.  Treatment of waste wood, untreated, sanitary landfill – (RoW) |
| Textile waste | 27,1 kg | | Treatment of waste yarn and textile, unsanitary landfill – (RoW) |
| Inert material waste | 381,6 kg | | Treatment of inert waste, sanitary landfill – (Europe without Switzerland) |
| ***Input Incineration (without considering the inert fraction)*** | | | |
| Waste | 1 ton | | Mixture composition as reported in chapter 4.1 |
| Electrical energy | 198,3 kWh | | The amount of electricity needed for the whole plant, ca. 14% electrical energy produced |
| Process elements | Process-specific burdens, residual material landfill | 309,7 kg | Mass-specific expenditures required for landfilling of incineration residues |
|  | Cement | 62,2 kg | Cement required for solidification of landfilled residual material |
| Inert material waste disposal to landfill | | | |
| Inert material waste | 381,6 kg | Treatment of inert waste, sanitary landfill – Europe without Switzerland | |
| Electricity | 0,025 kWh | Electricity required for wastewater treatment | |
| Heat | 0,03 MJ | Electricity required for wastewater treatment | |
| Electrical energy | 1416,3 kWh | Electricity produced from waste valorisation of Gioia Tauro plant; net electrical efficiency = 0,2889; Low Heating Value (LHV) of waste= 17,7 MJ/kg\* \*means that 1 kg of waste releases 17.7 megajoules of energy when burned, excluding the energy lost as water vapor. | |