

CO2-calculation 10 000 liter system

Volume to destruct after changeout	20000 L
	20 m ³ = ton
Changeout / year	2
Electricity for combustion	165 kWh/ton
Electricity used to combust	6600 kWh / year

Boiling energy of volume (indunstn)	m.cp.dT
cp	4,2 KJ/K.kg
dT	75 K
	6300000 KJ / year
Energy ideal boiling:	1750 kWh / year
Efficiency of boiler, apprx	0,8
Effective energy required to boil:	4375 kWh / year
CO2 emission / kWh	339,48 kg CO2 / kWh
Production of CO2 from incineration	1485225 kg CO2

Calculation of energy consumption for production of MWF components

Production of mineral oil	5,94 MJ/kg
Production of synthetic (bio) oil	6,18 MJ/kg
Mineral oil content in MWF:	0,4 kg/kg
MWF concentration	0,05 vol/vol
Fill up volume västberga	30000 L
Mineral oil used Västberga	600 L
Energy of production	2922,48 MJ
CO2 emission factor	50,92 kg CO2/GJ
CO2 PRODUCED	148,812682 kg

CO2 emission calculation (from destruction)

Emulsion chemical composition	6 carbons / molecule
Dilution:	5% of 50% cor polymer in MWF
	0,025 kg carbon-molecules / kg fluid
	500 kg carbon-molecules to be combusted
Molar weight, apprx	100 g/mol
Mol to combust	5000 mol
Ratio mol combust : mol carbon	6
Mol CO2 produced	30000 mol
Molar weight CO2	44 g/mol
Kg CO2 produced	2640 kg / year

CO2 emissions from transportation

Weight transported	40000 kg
Distance transported	30 km
Emissson factor truck	0,12 kg CO2 / tonkm
Kg CO2 produced	144 kg CO2

TOTAL ENERGY CONSUMPTION (PROD + DESTRUCT) 1488 ton CO2 / year