

MATSEN CHEMIE AG - GREENHOUSE GAS-BALANCE 2018

GHG Protocol Corporate & Corporate Value Chain (Scope 3) Accounting and Reporting Standard

Scope 1				
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Scope 2				
	MWh	t CO ₂ e		Source
Power consumption office location Hamburger Straße	6.34	3.10		Consumption data not available, therefore calculation according to consumption value / surface area Climate-KIC http://www.energiedatener-matschen.info/Climate-KIC/Leitfaden_18_07_2014.pdf (Building type office building assumed specific electricity consumption value 34 kWh / m² per year (high)), office space 198.19 m². Emission factor of the German electricity mix 2017 https://www.umweltbundesamt.de/sites/default/files/medien/1495/publikationen/2018-05-04_climate-change_14_2018_4fommc-2018_0.pdf
Electricity consumption in the Wismar laboratory	0.31	0.15		Emission factor of the German electricity mix 2017 https://www.umweltbundesamt.de/sites/default/files/medien/1495/publikationen/2018-05-04_climate-change_14_2018_4fommc-2018_0.pdf
Total electricity consumption	6.65	3.25		
Heating office location Hamburger Straße	39.64	10.54		Consumption data not available, therefore calculation according to consumption value / surface area Climate-KIC http://www.energiedatener-matschen.info/Climate-KIC/Leitfaden_18_07_2014.pdf (Building type office building assumed specific heating energy consumption value 200 kWh / m² per year (badi)), office space 198.19 m². Emission factor heating oil (light) https://www.umweltbundesamt.de/sites/default/files/medien/1495/publikationen/2018-05-04_climate-change_14_2018_4fommc-2018_0.pdf
Heating in the Wismar laboratory	2.44	0.25		Consumption data not available, therefore calculation according to consumption value / surface area Climate-KIC http://www.energiedatener-matschen.info/Climate-KIC/Leitfaden_18_07_2014.pdf (Building type office building assumed specific heating energy consumption value 80 kWh / m² per year (good)), laboratory area 30.54 m². Emission factor natural gas: https://www.umweltbundesamt.de/sites/default/files/medien/1495/publikationen/2018-05-04_climate-change_14_2018_4fommc-2018_0.pdf
Total heat consumption	42.08	10.79		
Scope 3				
3.1 Purchased goods and services		t CO₂ e		Comment / source
Office paper consumption	38.62 kg	0.04		Printer paper, business cards, flyers, labels, etc. Emission factor for paper products Source: DEFRA 2018.
Mobile phones	5 Stück	0.49		Mobile phones purchased in the reporting year https://www.apple.com/emea/press/pdf/products/iphone/XS_PER_sep2017.pdf
Laptops	7 Stück	3.07		Laptops purchased in the reporting year https://www.lenovo.com/de/en/social_responsibility/datasheets_notebooks/PCF-ThinkPad-L-C80.pdf
Screens	8 Stück	4.32		Screens purchased in the reporting year https://www.lenovo.com/de/en/datasheets_monitors/PCF-ThinkVision-T23-30-P23-30.pdf
Material consumption logistics	-	-		Not currently included: pallets, big bags, PE bags, foils, covers, cardboard boxes, etc.
Chemical products	-	-		Not currently included: (according to GHG protocol, "Final goods purchased for resale (for retail and distribution companies only)")
Total		7.92		
3.2 Capital goods				
	-	-		
3.3 Fuel and energy related emissions		2.83		
3.4 Transport and distribution (upstream)	tonne-kilometre	t CO₂ e		
Seagoing vessel	51.022.881	246.00		Scope 3.3 includes all GHG emissions from the mining, production and transportation of purchased energy sources and fuels, related energy and transmission losses. Sources: Process details: Oil heating (IE-2010 (end energy)) https://www.proba.umweltbundesamt.de/de/prozessdetails.php?id=101&id=C7-001B-400-AB00-10FF9ABC7481 . Process details: Gas heating EU-2010 (end energy) https://www.proba.umweltbundesamt.de/de/prozessdetails.php?id=106&id=C7-AC1B-400-AB00-10FF9ABC7481 . Process details: German electricity mix https://www.umweltbundesamt.de/de/prozessdetails.php?id=106&id=C7-AC1B-400-AB00-10FF9ABC7481 . For all goods sold in the 2018 financial year, determination of the distances using integrated transport route analysis within our ERP system. When taking the transport-related greenhouse gas emissions into account, we decided not to include the purchased goods transport routes in the GHG balance until the goods are sold and delivered. In this way, we map the entire goods transport route for every sale made in 2018 from our suppliers to the warehouse and from there to our customers. Purchases that were made in 2017 but were not delivered to customers until 2018 are also reported in this way. A comprehensive explanation of the method can be found in the annex: https://matsen.de/de/veranstaltungen/2018/ausgaben/2018/Scope-3-4
Trucks	4.902.196	407.91		The Trade Lane Emission Factors of the Clean Cargo Working Group form the basis here: https://www.bccw.org/reports/BSC_Clean_Cargo_Working_Group_Emissions_Factors_2018.pdf . Applied according to CCWG Carbon Emissions Methodology 2018 https://www.bccw.org/reports/BSC_Clean_Cargo_Working_Group_Emissions_Factors_2018.pdf . Including the upstream chain (WTW), utilisation 70%, loading 10 tons / TEU. The calculated distances for sea transport were increased by 15% in accordance with the CCWG Carbon Emissions Methodology. Note to table: distance increase 15%.
Inland waterway vessel	-	-		24-40t truck emission factor (capacity 24 t, diesel, pollution class, Euro-5, road category: average value, 50% capacity utilization) https://www.proba.umweltbundesamt.de/de/prozessdetails.php?id=101&id=C7-001B-400-AB00-10FF9ABC7481 (including upstream chain) - See Ecoltransit Methodology 2018 https://www.ecotransit.org/download/EcolTransit_World_Methodology_Data_Update_2018.pdf
Rail freight transport	-	-		A great effort is required to determine retrospectively the means of transport used on the selected routes, on the purchasing side in 2017 and 2018, which is why we are not identifying any inland waterway and freight train shipments in this GHG balance sheet. Instead, we assume the most unfavourable emission factor truck transport on the transport routes concerned, even if in reality the shipment is carried out by inland waterway or freight train as standard and only in exceptional cases by truck.
Total	55.925.077	653.91		
3.5 Waste produced				Not currently included: pallets, big bags, PE bags, foils, covers and cardboard boxes
3.6 Business trips	passenger kilometre	t CO₂ e		
Air travel	108362 pkm	32.23		CO ₂ calculator from the Federal Environment Agency: https://uba.co2-rechner.de/de_DE/mobility-flight
Train	23744 pkm	0.85		Distance determined according to car kilometres (Google Maps). Emission factor: 0.036 kg CO ₂ / pkm Source: Federal Environment Agency 2018
Car	-	0.59		If exact fuel consumption cannot be determined, emission factors for average cars per km are used. Source: DEFRA 2018
Hotel accommodation	62	2.84		Source: DEFRA 2018 (country-specific emission factors in kg CO ₂ e/room* night)
Total		36.51		
3.7 Commuting workers	passenger kilometre	t CO₂ e		
Car	12486 pkm	2.33		Emission factors: DEFRA 2018
Public transport	43967 pkm	2.76		Emission factors: Federal Environment Agency 2018 https://www.umweltbundesamt.de/themen/verkehr-laerm/emissionsdaten#tab-1
Total		5.09		

Total emissions SCOPE 1 (t CO₂e)		0.00	
plus 5% safety margin	0.00	0.00	0.00%
Total emissions SCOPE 2 (t CO₂e)		14.04	
plus 5% safety margin	0.70	14.74	1.95%
Total emissions SCOPE 3 (t CO₂e)		706.26	
plus 5% safety margin	35.31	741.57	98.05%
Total sum of emissions (t CO₂e)		756.31	100.00%

