

EKOTEKS  
LABORATUVAR VE  
GÖZETİM HİZMETLERİ



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# Carbon Footprint Report 2019

# ABOUT US

*Ekoteks Laboratory was founded in 1998, as a participation of IHKIB (Istanbul Ready-to-wear and Clothing Exporters Association). With its trained, experienced and dynamic staff, Ekoteks operates over 300 accredited test methods on textile, footwear, toys, childcare products, cosmetics, plastic and accessories, water and wastewater.*

*Ekoteks supports the exporters to develop their R&D activities and to set up an infrastructure for product development activities.*

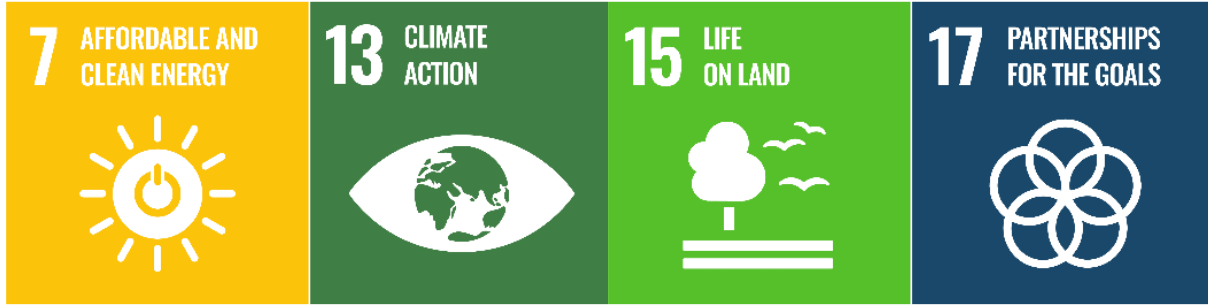
*Ekoteks Laboratory has also surveillance status; therefore, companies become as brands on worldwide market. Today, it is obvious that the most important points of customer satisfaction is to understand customer needs and quote the best prices as well high quality service.*

*Apart from testing, seminars, symposium, workshop, trainings are hold regularly to contribute to the promotion of primarily export organizations and company.*



## *UN Sustainable Development Goals and Sustainable Developments at Ekoteks*

*Ekoteks Laboratory adopts UN goals and works to fulfill its responsibilities. Social health and safety, environmental friendly solutions attract and Ekoteks try to be involved. This carbon footprint report link to the SDGs 7, 13, 15 and 17.*



*The carbon footprint of Ekoteks evaluated by direct greenhouse gas emissions and indirect greenhouse gas emissions. Direct emissions related to transport process, natural gas consumption and air conditioner gases. Indirect emissions related to energy consumption and transportation of staffs.*

*This Carbon footprint report was prepared according to TS EN ISO 14064-1 standard and GHG emission inventory. The calculation methodology and tools were stated in following pages. All the data which used for calculation were based on internal consumption reports during the 2019.*

*The results provide the amount of all greenhouse gas emissions according to the GHG Protocol. Therefore, the amount of the carbon footprint is given in kilogram/tons CO<sub>2</sub> equivalent (CO<sub>2</sub>e).*

## GHG Quantification Methodology

Standard:	EN ISO 14064-1:2012: Greenhouse gases – Specifications with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals.
Allocation:	No allocation conducted.
Units:	Considered as 'kg' or 'kWh'. See Appendix 2 for the density factor per DEFRA.
Combustion of biomass:	No biomass combustion.
Activities to reduce GHG emissions:	No activity to be in placed within the reporting period.
Quantification methodology per IPCC 2006:	Tier 1
Quantification equation:	Individual GHG emission amount (CO <sub>2</sub> e) = (Consumption Amount) x (Emission Factor)
GWP values:	IPCC 5th Assessment Report
Reporting method:	ISO 14064-1:2012; Section 7.3 GHG report content

### Refrigerant Leakage Assumptions

Type of Technology	Leakage Percent	Reference
Domestic Refrigeration	%0.1	IPCC (2006), Vol 3, Chapter 7, Table 7.9
Chillers	%2	IPCC (2006), Vol 3, Chapter 7, Table 7.9
Residential and Commercial A/C, including Heat Pumps	%1	IPCC (2006), Vol 3, Chapter 7, Table 7.9
Fire extinguisher	%0.4	IPCC/TEAP Special Report: Safeguarding the Ozone Layer and the Global Climate System, Volume 9, Fire Protection

### Emission Factors

Stationary Combustion	IPCC 2006 Vol 2, Chapter 2 Table 2.3	$EF (kWh) = \frac{Default\ EF\ (per\ IPCC\ 2006)\ \frac{kg}{Tj}}{277777,78\ kWh/Tj}$
Mobile Combustion – On Road	IPCC 2006 Vol 2, Chapter 3, Table 3.2.1 and 3.2.2	
Mobile Combustion – Off Road	IPCC 2006 Vol 2, Chapter 3, Table 3.3.1	
CO <sub>2</sub> equivalents	$CO_2\ e = (CO_2 \times 1) + (CH_4 \times 28) + (N_2O \times 265)$	
Electricity EF:	Electricity for Turkey : 0.65 kg CO <sub>2</sub> e/kWh	Ecoinvent v.3.5
Refrigerants GWPs:	DEFRA, 2017 Emission Factors	
Net Calorific Value (NCV):	IPCC 2006 Vol 2, Chapter 1 Table 1.2	

### Uncertainty of the Accounting

Confidence level:	95%	Reference: IPCC, Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories
Uncertainty quantification per:	GHG Uncertainty Tool	
Uncertainty of the study:	4.57	
Level of Assurance:	Makul	

## GHG Emissions

### Direct Greenhouse Gas Emissions

Source Description	GHG Source	Activity Data	Unit	GHG Emission Factor	Unit	CO2 emissions in metric tonnes	GHG Emission Factor Reference
Mobile Combustion – On Road	Motor Gasoline – Oxidation Catalyst	2,787.750000	kg	3.19	kgCO2e / kg	8.906627	IPCC (2006), Vol 2, Chapter 3, Tablo 3.2.1 ve Tablo 3.2.2
Mobile Combustion – On Road	Gas / Diesel Oil	13,033.000000	kg	3.24	kgCO2e / kg	42.167439	IPCC (2006), Vol 2, Chapter 3, Tablo 3.2.1 ve Tablo 3.2.2
Mobile Combustion – Off Road	Motor Gasoline 4-stroke Jeneratör	1,365.000000	kg	3.16	kgCO2e / kg	4.307242	IPCC (2006), Vol 2, Chapter 3, Tablo 3.3.1
Refrigerant Leakage	R410A	0.250000	kg	2,088.00	kgCO2e / kg	0.522000	DEFRA, 2017 Emission Factors
<b>TOTAL</b>						<b>55.90</b>	

### Energy Indirect Greenhouse Gas Emission

Purchased Energy: Electricity	Electricity for Turkey	852,162.58	kWh	0.65	kgCO2e / kWh	549.64	Ecoinvent v.3.5
<b>TOTAL</b>						<b>549.64</b>	

### Other Indirect Greenhouse Gas Emission

Travel	Business Travel (Airline)	90,060.54	km	0.13	kgCO2e / km	11.70	Ecoinvent v3.2
Travel	Staff Services	55,926.00	km	0.26	kgCO2e / km	14.65	Euro 6 Emisyon sınıfı
<b>TOTAL</b>						<b>26.35</b>	

## References

- 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 2 Chapter 2 [http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2\\_Volume2/V2\\_2\\_Ch2\\_Stationary\\_Combustion.pdf](http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_2_Ch2_Stationary_Combustion.pdf)
- 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 2 Chapter 3 [http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/1\\_Volume1/V1\\_3\\_Ch3\\_Uncertainties.pdf](http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/1_Volume1/V1_3_Ch3_Uncertainties.pdf)
- 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 3 Chapter 7 [https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/3\\_Volume3/V3\\_7\\_Ch7\\_ODS\\_Substitutes.pdf](https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/3_Volume3/V3_7_Ch7_ODS_Substitutes.pdf)
- DEFRA Greenhouse gas reporting: conversion factors 2017 <https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2017>
- Ecoinvent, <https://www.ecoinvent.org/about/organisation/organisation.html>
- IPCC/TEAP Special Report: Safeguarding the Ozone Layer and the Global Climate System, Volume 9, Fire Protection <https://www.ipcc.ch/pdf/special-reports/sroc/sroc09.pdf>
- IPCC, Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories
- IPCC Climate Change 2013. The Physical Science Basis. Working Group I contribution to the Fifth Assessment Report of the IPCC. <http://www.climatechange2013.org>
- EN ISO 14064-1:2012: Greenhouse gases – Specifications with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals.