



**Nordisk Microfiber**

# **Life Cycle Assessment Cradle to Gate**

**Performance Towel Blue, 40x70 cm**

**2025-12-19**

# Summary



## 01 | Methodology



## 02 | Results

# 01

## Methodology

# Environmental Impact Assessment

## Functional unit

The functional unit of this analysis is "Product 'Performance Towel Blue, 40x70 cm' (product code: P-40-70-BLUE) is made of 80% polyester + 20 % polyamide, weighs 0.112 kgs, and is certified under Oekotex"

## Impact Indicator

The impact is measured through the "EF v3.1 method" method

## Hypothesis

The data source for the emission factors is EcolInvent 3.12. The System Model used is allocation, cut-off by classification.

Where data was not available from NMF, conservative estimates have been applied.

Assumptions include; origin of raw materials (GLO, IN averages) and manufacturing processes (GLO averages).

# Environmental Impact Assessment

## System Boundaries

The scope of this study is Cradle-to-Gate and assesses according to EF v3.1 as LCIA (Life Cycle Impact Assessment) method is developed by the European Commission.

This method is compatible with ISO 14040/44 and PEF. This LCA has not been independently reviewed.

## Exclusions

The following stages have been excluded: Downstream Transportation, Use and End-of-Life.

# Emission Factor Inventory

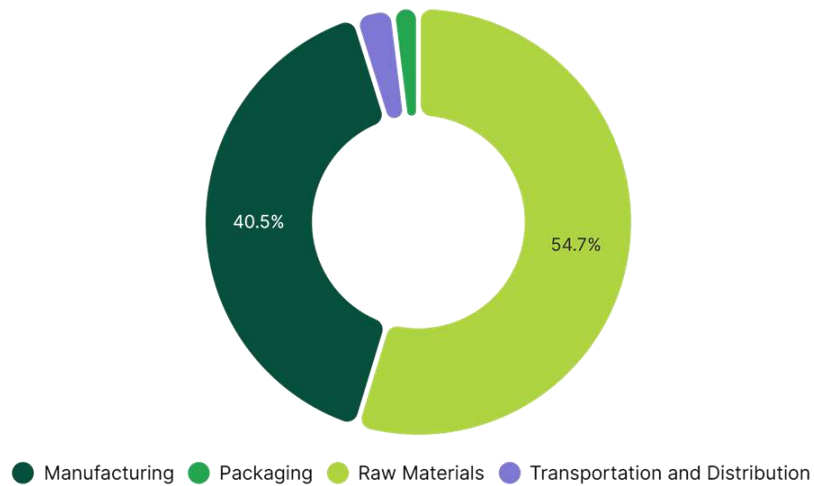
| Nu<br>m | Emission Factor                                                                                                                                | Source         | Value | Unit        |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-------|-------------|
| 1       | Polyethylene terephthalate, granulate, amorphous   Market for polyethylene terephthalate, granulate, amorphous   Market activity               | ECOINVENT 3.12 | 3.70  | kg          |
| 2       | Nylon 6–6   Market for nylon 6–6   Market activity                                                                                             | ECOINVENT 3.12 | 8.32  | kg          |
| 3       | Fibre, polyester   Polyester fibre production, finished   Ordinary transforming activity                                                       | ECOINVENT 3.12 | 4.78  | kg          |
| 4       | Weaving, synthetic fibre   Market for weaving, synthetic fibre   Market activity                                                               | ECOINVENT 3.12 | 0.56  | kg          |
| 5       | Printed paper   Market for printed paper   Market activity                                                                                     | ECOINVENT 3.12 | 2.54  | kg          |
| 6       | Packaging film, low density polyethylene   Market for packaging film, low density polyethylene   Market activity                               | ECOINVENT 3.12 | 3.37  | kg          |
| 7       | Corrugated board box   Market for corrugated board box   Market activity                                                                       | ECOINVENT 3.12 | 1.27  | kg          |
| 8       | Transport, freight, lorry, diesel, unspecified   Market for transport, freight, lorry, unspecified   Market activity                           | ECOINVENT 3.12 | 0.16  | metric_t_km |
| 9       | Transport, freight, sea, container ship, heavy fuel oil   Market for transport, freight, sea, container ship, heavy fuel oil   Market activity | ECOINVENT 3.12 | 0.01  | metric_t_km |
|         |                                                                                                                                                |                |       |             |

# 02

## Results

Performance Towel Blue, 40x70 cm

# Climate Change

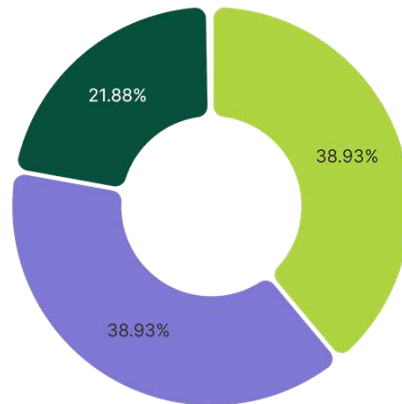


| Step                            | Impact<br>(kg CO <sub>2</sub> eq) | Percentage<br>(%) |
|---------------------------------|-----------------------------------|-------------------|
| Raw Materials                   | 0.81                              | 54.70 %           |
| Manufacturing                   | 0.6                               | 40.47 %           |
| Transportation and Distribution | 0.04                              | 2.88 %            |
| Packaging                       | 0.03                              | 1.95 %            |
|                                 |                                   |                   |
| TOTAL                           | 1.47                              | 100.00 %          |



Performance Towel Blue, 40x70 cm

# Climate Change - Raw Materials

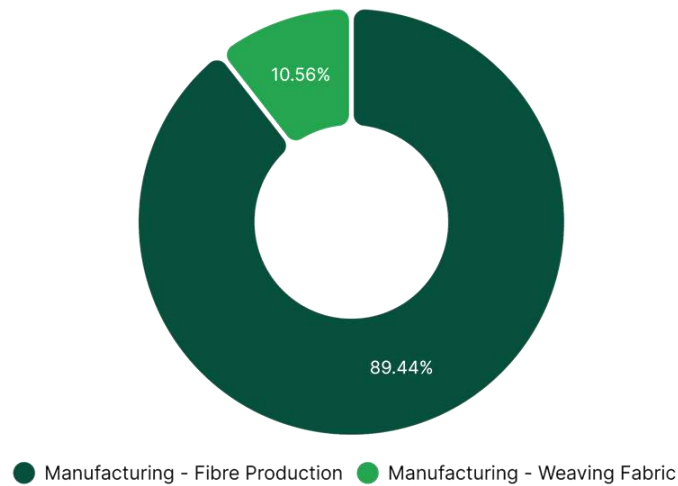


● Polyamide - Main Fabric - Raw Materials - KGs ● Polyester - Label 1 - Raw Materials - KGs  
● Polyester - Main Fabric - Raw Materials - KGs ● Polyester - Sewing Thread - Raw Materials - KGs

| Activity                                        | Emission Factor Num | Quantity               | Unit | Impact (kg CO <sub>2</sub> eq) | Percentage (%) |
|-------------------------------------------------|---------------------|------------------------|------|--------------------------------|----------------|
| Polyester - Sewing Thread - Raw Materials - KGs | 1                   | 0.08                   | kg   | 0.31                           | 38.93 %        |
| Polyester - Main Fabric - Raw Materials - KGs   | 1                   | 0.08                   | kg   | 0.31                           | 38.93 %        |
| Polyamide - Main Fabric - Raw Materials - KGs   | 2                   | 0.02                   | kg   | 0.18                           | 21.88 %        |
| Polyester - Label 1 - Raw Materials - KGs       | 1                   | 5.8 · 10 <sup>-4</sup> | kg   | 2.14 · 10 <sup>-3</sup>        | 0.27 %         |
| TOTAL                                           |                     |                        |      | 0.81                           | 100.00 %       |

## Performance Towel Blue, 40x70 cm

# Climate Change - Manufacturing

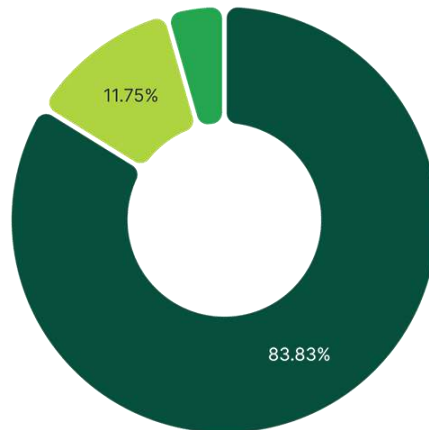


| Activity                         | Emission Factor Num | Quantity | Unit | Impact (kg CO <sub>2</sub> eq) | Percentage (%) |
|----------------------------------|---------------------|----------|------|--------------------------------|----------------|
| Manufacturing – Fibre Production | 3                   | 0.11     | kg   | 0.53                           | 89.44 %        |
| Manufacturing – Weaving Fabric   | 4                   | 0.11     | kg   | 0.06                           | 10.56 %        |

|       |     |          |
|-------|-----|----------|
| TOTAL | 0.6 | 100.00 % |
|-------|-----|----------|

## Performance Towel Blue, 40x70 cm

# Climate Change - Packaging

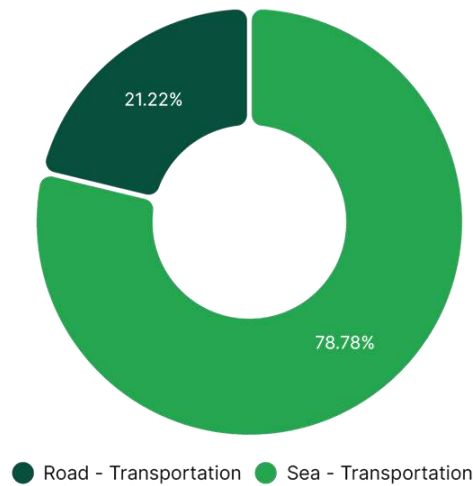


● Cardboard Box - Tertiary Packaging - KGs ● Paper Sticker - Primary Packaging - KGs

| Activity                                 | Emission Factor Num | Quantity             | Unit | Impact (kg CO <sub>2</sub> eq) | Percentage (%) |
|------------------------------------------|---------------------|----------------------|------|--------------------------------|----------------|
| Cardboard Box – Tertiary Packaging – KGs | 7                   | 0.02                 | kg   | 0.02                           | 83.83 %        |
| Polyethelyne – Primary Packaging – KGs   | 6                   | 1 · 10 <sup>-3</sup> | kg   | 3.37 · 10 <sup>-3</sup>        | 11.75 %        |
| Paper Sticker – Primarry Packaging – KGs | 5                   | 5 · 10 <sup>-4</sup> | kg   | 1.26 · 10 <sup>-3</sup>        | 4.42 %         |
|                                          |                     |                      |      |                                |                |
|                                          |                     |                      |      |                                |                |
|                                          |                     |                      |      |                                |                |
| TOTAL                                    |                     |                      |      | 0.03                           | 100.00 %       |

Performance Towel Blue, 40x70 cm

# Climate Change - Transportation and Distribution



| Activity              | Emission Factor Num | Quantity | Unit        | Impact (kg CO <sub>2</sub> eq) | Percentage (%) |
|-----------------------|---------------------|----------|-------------|--------------------------------|----------------|
| Sea - Transportation  | 9                   | 3.47     | metric_t_km | 0.03                           | 78.78 %        |
| Road - Transportation | 8                   | 0.06     | metric_t_km | 9.01 · 10 <sup>-3</sup>        | 21.22 %        |

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|-------|--|--|--|------|----------|
| TOTAL |  |  |  | 0.04 | 100.00 % |
|-------|--|--|--|------|----------|

This LCA was carried out by Sustaina Company using the Greenly software. This LCA has not been third party verified.