

TOWEFO Toward Effluent Zero	Partner ENEA	Identification code TM-108-010	Rev. 0	Dis CO	Pag. 1	of 22
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ANNEX 7
MODULES OF TEXTILES PRODUCTS

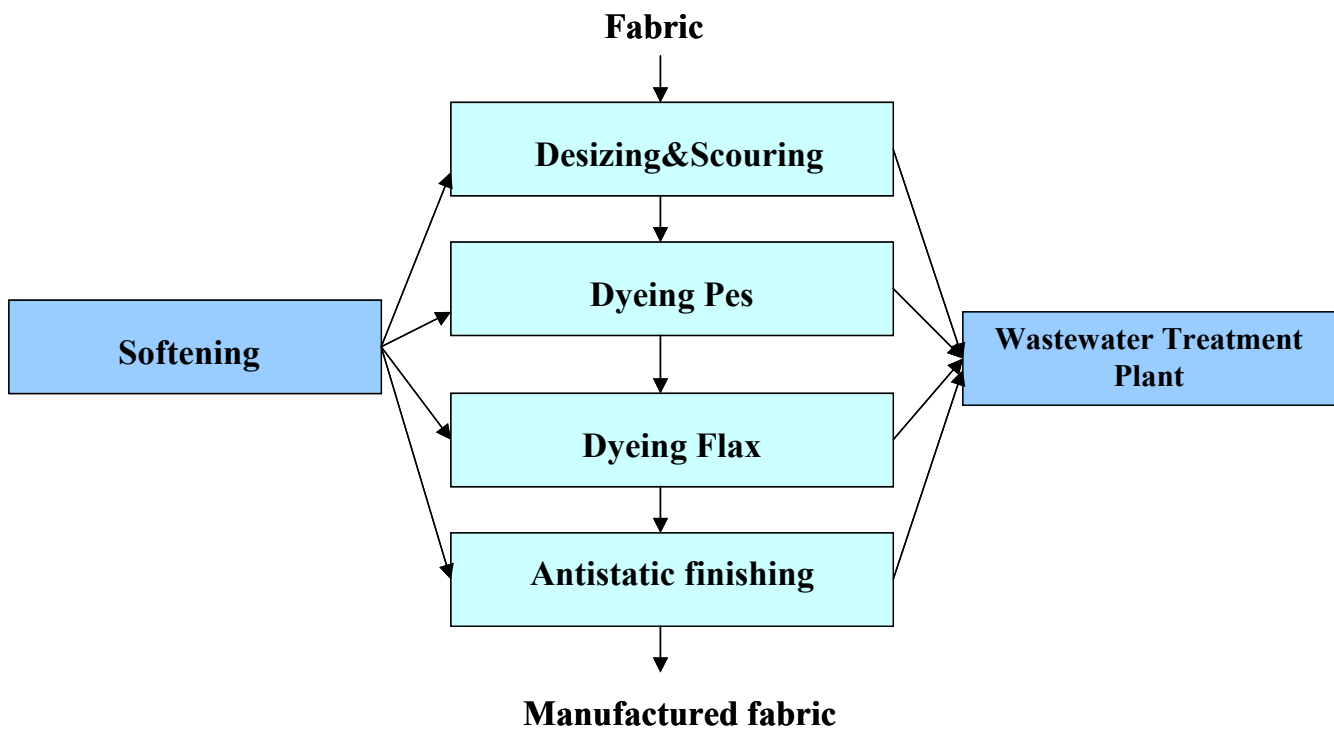
TOWEFO Toward Effluent Zero	Partner ENEA	Identification code TM-108-010	Rev. 0	Dis CO	Pag. 2	of 22
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1	SIZED FLAX/PES FABRIC DYED WITH DARK COLOURS.....	3
2	SIZED FLAX/PES FABRIC DYED WITH LIGHT COLOURS.....	5
3	NON SIZED FLAX/PES FABRIC DYED WITH LIGHT COLOURS.....	7
4	ELECTRONIC TABLE REACTIVE PRINTING OF VISCOSE FABRIC	9
5	ROTARY MACHINE REACTIVE PRINTING OF VISCOSE FABRIC.....	11
6	SILK YARN DYED WITH DARK COLOURS.....	13
7	VISCOSE FABRIC DYED IN JIGGER WITH DARK COLOURS.....	15
8	ACID DYEING OF SILK.....	17
9	COTTON /PES FABRIC PRODUCTION	19
10	COTTON FABRIC PRODUCTION	21

1 Sized Flax/Pes Fabric dyed with dark colours

Product systems	
Desizing&Scouring	F.3.2 Desizing – Flax/Pes fabric
Dyeing Pes	G.3.1 Dark disperse dyeing – Flax/Pes fabric
Dyeing Flax	G.8.1 Dark reactive dyeing – Flax/Pes fabric
Antistatic finishing	H4 Antistatic finishing – Flax/Pes fabric

PROCESS SCHEME



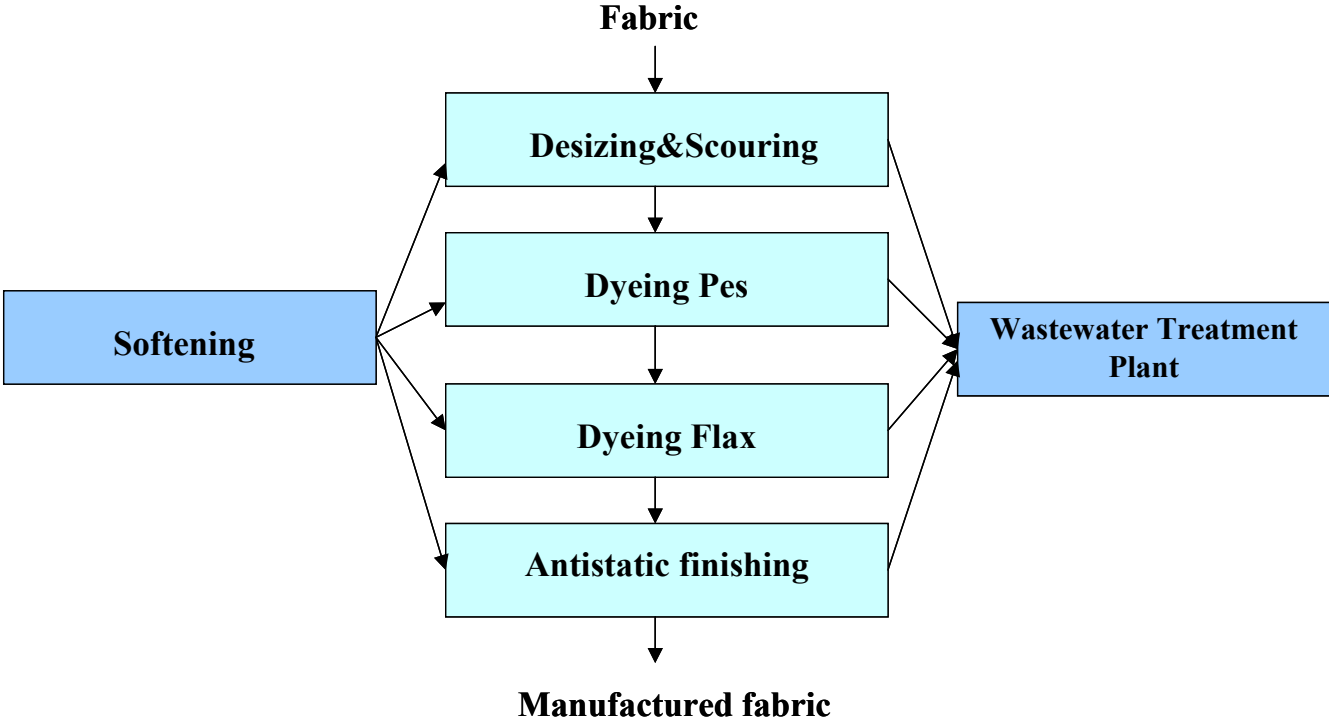
TOWEFO Toward Effluent Zero	Partner ENEA	Identification code TM-108-010	Rev. 0	Dis CO	Pag. 4	of 22
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	Flow	Units	Value	
INPUT	(r) Iron (Fe, ore)	kg	2,08E+00	
	(r) Natural Gas (in ground)	kg	4,16E+02	
	(r) Oil (in ground)	kg	1,22E+02	
	(r) Potassium Chloride (KCl, as K2O, in ground)	kg	2,63E+00	
	(r) Uranium (U, ore)	kg	9,09E-04	
	Flax/Pes Fabric	kg	1,00E+02	
	Water: Public Network	litre	2,52E+04	
	Water: Unspecified Origin	litre	1,23E+03	
	Water: Well	litre	2,20E-03	
OUTPUT	(a) Aldehyde (unspecified)	g	1,90E+00	
	(a) Alkane (unspecified)	g	5,60E+01	
	(a) Arsenic (As)	g	7,39E-02	
	(a) Benzene (C6H6)	g	8,14E+00	
	(a) Butane (n-C4H10)	g	3,04E+01	
	(a) Cadmium (Cd)	g	1,45E-01	
	(a) Carbon Dioxide (CO2, fossil)	g	1,44E+06	
	(a) Ethane (C2H6)	g	1,96E+02	
	(a) Ethylene (C2H4)	g	2,00E+02	
	(a) Heptane (C7H16)	g	2,06E+00	
	(a) Hexane (C6H14)	g	4,12E+00	
	(a) Hydrocarbons (except methane)	g	1,04E+03	
	(a) Hydrocarbons (unspecified)	g	9,96E+01	
	(a) Lead (Pb)	g	3,52E-01	
	(a) Methane (CH4)	g	5,11E+03	
	(a) Nickel (Ni)	g	2,86E+00	
	(a) Nitrogen Oxides (NOx as NO2)	g	1,61E+03	
	(a) Nitrous Oxide (N2O)	g	1,11E+01	
	(a) Propane (C3H8)	g	5,16E+01	
	(a) Sulphur Oxides (SOx as SO2)	g	6,77E+03	
	(a) Vanadium (V)	g	1,13E+01	
	(a) VOC (Volatile Organic Compounds)	g	6,35E+01	
	(s) Arsenic (As)	g	3,30E-03	
	(s) Chromium (Cr III, Cr VI)	g	4,13E-02	
	(s) Zinc (Zn)	g	1,24E-01	
	(w) Ammonia (NH4+, NH3, as N)	g	1,75E+02	
	(w) Benzene (C6H6)	g	1,57E+00	
	(w) Cadmium (Cd++)	g	4,59E-03	
	(w) Chromate (CrO4--)	g	2,47E-02	
	(w) Chromium (Cr III)	g	8,67E-02	
	(w) Chromium (Cr III, Cr VI)	g	2,81E-02	
	(w) COD (Chemical Oxygen Demand)	g	1,50E+03	
	(w) Nitrogenous Matter (unspecified, as N)	g	4,02E+02	
	(w) Oils (unspecified)	g	2,54E+01	
	Flax/Pes Fabric	kg	1,00E+02	
	Wastewater	litre	2,52E+04	
	REMINDERS	E Feedstock Energy	MJ	5,22E+02
		E Fuel Energy	MJ	2,35E+04
		E Non Renewable Energy	MJ	2,34E+04
		E Renewable Energy	MJ	6,38E+02
		E Total Primary Energy	MJ	2,40E+04
		Electricity	MJ elec	3,27E+03
		COD to Wastewater Treatment Plant	kg	4,06E+01
TSS to Wastewater Treatment Plant		kg	8,82E-01	

2 Sized Flax/Pes Fabric dyed with light colours

Product systems	
Desizing&Scouring	F.3.2 Desizing – Flax/Pes fabric
Dyeing Pes	G.1.1 Light disperse dyeing – Flax/Pes fabric
Dyeing Flax	G.7.2 Light reactive dyeing – Flax/Pes fabric
Antistatic finishing	H4 Antistatic finishing – Flax/Pes fabric

PROCESS SCHEME



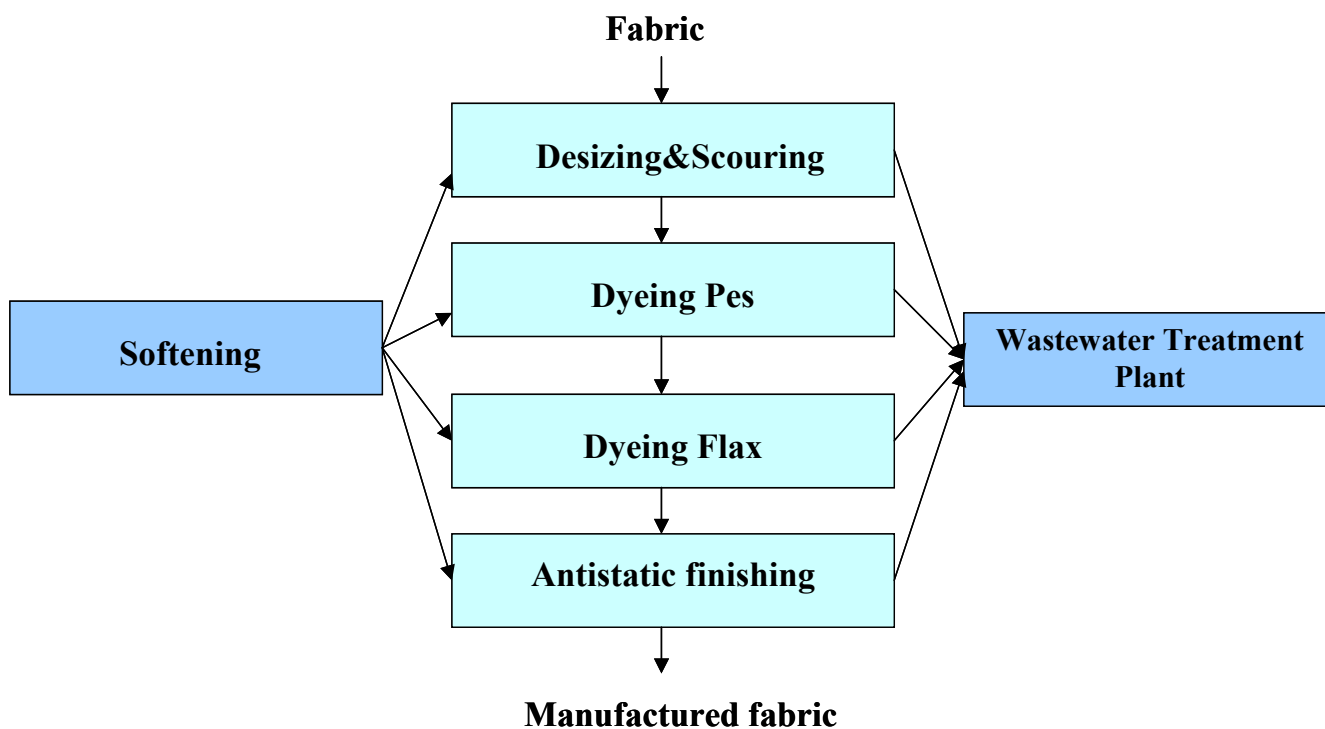
TOWEFO Toward Effluent Zero	Partner ENEA	Identification code TM-108-010	Rev. 0	Dis CO	Pag. 6	of 22
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	Flow	Units	Value
INPUT	(r) Iron (Fe, ore)	kg	2,80E+00
	(r) Natural Gas (in ground)	kg	6,60E+02
	(r) Oil (in ground)	kg	1,95E+02
	(r) Potassium Chloride (KCl, as K2O, in ground)	kg	2,16E+01
	(r) Uranium (U, ore)	kg	1,77E-03
	Flax/Pes fabric	kg	1,00E+02
	Water: Public Network	litre	6,15E+04
	Water: Unspecified Origin	litre	2,70E+03
	Water: Well	litre	1,74E-02
OUTPUT	(a) Alkane (unspecified)	g	7,45E+01
	(a) Ammonia (NH3)	g	3,61E+01
	(a) Arsenic (As)	g	8,98E-02
	(a) Benzene (C6H6)	g	1,06E+01
	(a) Butane (n-C4H10)	g	3,99E+01
	(a) Cadmium (Cd)	g	1,86E-01
	(a) Ethane (C2H6)	g	2,55E+02
	(a) Ethylene (C2H4)	g	2,64E+02
	(a) Heptane (C7H16)	g	2,72E+00
	(a) Hexane (C6H14)	g	5,45E+00
	(a) Hydrocarbons (except methane)	g	1,38E+03
	(a) Hydrocarbons (unspecified)	g	6,67E+02
	(a) Lead (Pb)	g	5,97E-01
	(a) Methane (CH4)	g	6,88E+03
	(a) Nickel (Ni)	g	3,68E+00
	(a) Nitrogen Oxides (NOx as NO2)	g	2,72E+03
	(a) Nitrous Oxide (N2O)	g	1,94E+01
	(a) Propane (C3H8)	g	6,71E+01
	(a) Sulphur Oxides (SOx as SO2)	g	1,50E+04
	(a) Toluene (C6H5CH3)	g	6,31E+00
	(a) Vanadium (V)	g	1,46E+01
	(a) VOC (Volatile Organic Compounds)	g	6,35E+01
	(s) Chromium (Cr III, Cr VI)	g	5,47E-02
	(s) Zinc (Zn)	g	1,64E-01
	(w) Ammonia (NH4+, NH3, as N)	g	4,15E+02
	(w) Benzene (C6H6)	g	2,11E+00
	(w) Cadmium (Cd++)	g	6,27E-03
	(w) Chromate (CrO4--)	g	1,97E-01
	(w) Chromium (Cr III)	g	1,15E-01
	(w) Chromium (Cr III, Cr VI)	g	3,82E-02
	(w) COD (Chemical Oxygen Demand)	g	3,61E+03
	(w) Nitrogenous Matter (unspecified, as N)	g	9,62E+02
	(w) Oils (unspecified)	g	3,39E+01
	Flax/Pes fabric	kg	1,00E+02
	Wastewater	litre	6,03E+04
REMINDERS	E Feedstock Energy	MJ	5,51E+02
	E Fuel Energy	MJ	3,71E+04
	E Non Renewable Energy	MJ	3,71E+04
	E Renewable Energy	MJ	5,60E+02
	E Total Primary Energy	MJ	3,77E+04
	Electricity	MJ elec	2,84E+03
	COD to Wastewater Treatment Plant	kg	7,96E+01
	TSS to Wastewater Treatment Plant	kg	1,25E+00

3 Non Sized Flax/Pes Fabric dyed with light colours

Product systems	
Desizing&Scouring	F.1.4 Scouring – Flax/Pes fabric
Dyeing Pes	G.1.1 Light disperse dyeing – Flax/Pes fabric
Dyeing Flax	G.7.2 Light reactive dyeing – Flax/Pes fabric
Antistatic finishing	H4 Antistatic finishing – Flax/Pes fabric

PROCESS SCHEME



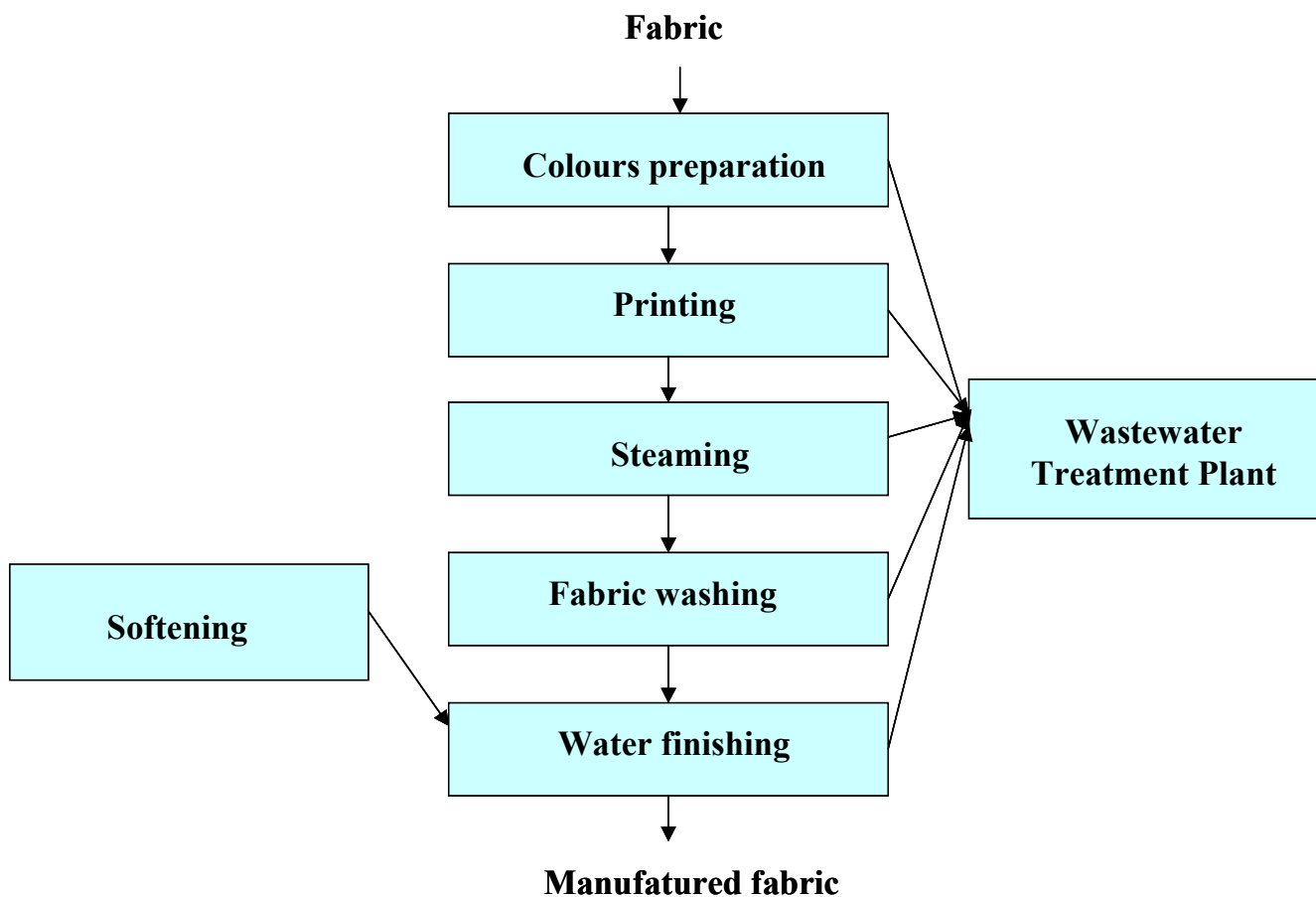
TOWEFO Toward Effluent Zero	Partner ENEA	Identification code TM-108-010	Rev. 0	Dis CO	Pag. 8	of 22
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	Flow	Units	Value	
INPUT	(r) Iron (Fe, ore)	kg	2,51E+00	
	(r) Natural Gas (in ground)	kg	6,02E+02	
	(r) Oil (in ground)	kg	1,89E+02	
	(r) Potassium Chloride (KCl, as K ₂ O, in ground)	kg	2,15E+01	
	(r) Uranium (U, ore)	kg	1,55E-03	
	Flax/Pes fabric	kg	1,00E+02	
	Water: Public Network	litre	5,96E+04	
	Water: Unspecified Origin	litre	2,59E+03	
	Water: Well	litre	1,72E-02	
OUTPUT	(a) Alkane (unspecified)	g	6,75E+01	
	(a) Ammonia (NH ₃)	g	3,54E+01	
	(a) Arsenic (As)	g	8,59E-02	
	(a) Benzene (C ₆ H ₆)	g	9,60E+00	
	(a) Butane (n-C ₄ H ₁₀)	g	3,72E+01	
	(a) Cadmium (Cd)	g	1,80E-01	
	(a) Carbon Dioxide (CO ₂ , fossil)	g	1,83E+06	
	(a) Ethane (C ₂ H ₆)	g	2,41E+02	
	(a) Ethylene (C ₂ H ₄)	g	2,35E+02	
	(a) Heptane (C ₇ H ₁₆)	g	2,62E+00	
	(a) Hexane (C ₆ H ₁₄)	g	5,25E+00	
	(a) Hydrocarbons (except methane)	g	1,27E+03	
	(a) Hydrocarbons (unspecified)	g	6,62E+02	
	(a) Methane (CH ₄)	g	6,52E+03	
	(a) Nickel (Ni)	g	3,54E+00	
	(a) Nitrogen Oxides (NO _x as NO ₂)	g	2,57E+03	
	(a) Propane (C ₃ H ₈)	g	6,32E+01	
	(a) Sulphur Oxides (SO _x as SO ₂)	g	1,47E+04	
	(a) Toluene (C ₆ H ₅ CH ₃)	g	5,77E+00	
	(a) Vanadium (V)	g	1,41E+01	
	(a) VOC (Volatile Organic Compounds)	g	6,32E+01	
	(s) Arsenic (As)	g	3,89E-03	
	(s) Chromium (Cr III, Cr VI)	g	4,87E-02	
	(s) Zinc (Zn)	g	1,46E-01	
	(w) Ammonia (NH ₄ ⁺ , NH ₃ , as N)	g	4,02E+02	
	(w) Benzene (C ₆ H ₆)	g	2,03E+00	
	(w) Cadmium (Cd ⁺⁺)	g	6,00E-03	
	(w) Chromate (CrO ₄ ⁻⁻)	g	1,96E-01	
	(w) Chromium (Cr III)	g	1,02E-01	
	(w) Chromium (Cr III, Cr VI)	g	3,69E-02	
	(w) COD (Chemical Oxygen Demand)	g	3,50E+03	
	(w) Nitrogenous Matter (unspecified, as N)	g	9,32E+02	
	(w) Oils (unspecified)	g	3,10E+01	
	Flax/Pes fabric	kg	1,00E+02	
	Wastewater	litre	5,96E+04	
	REMINDERS	E Feedstock Energy	MJ	4,99E+02
		E Fuel Energy	MJ	3,44E+04
		E Non Renewable Energy	MJ	3,44E+04
		E Renewable Energy	MJ	5,24E+02
		E Total Primary Energy	MJ	3,49E+04
		Electricity	MJ elec	2,66E+03
		COD to Wastewater Treatment Plant	kg	5,39E+01
TSS to Wastewater Treatment Plant		kg	1,10E+00	

4 Electronic table reactive printing of viscose fabric

Product systems	
Printing	F.4.3 Electronic table reactive printing – Viscose fabric
Steaming	G.1 Saturated steaming – Viscose fabric
Fabric washing	H.1.3 Acid printed washing– Viscose fabric
Water finishing	I.1 Water Finishing - Viscose fabric

PROCESS SCHEME



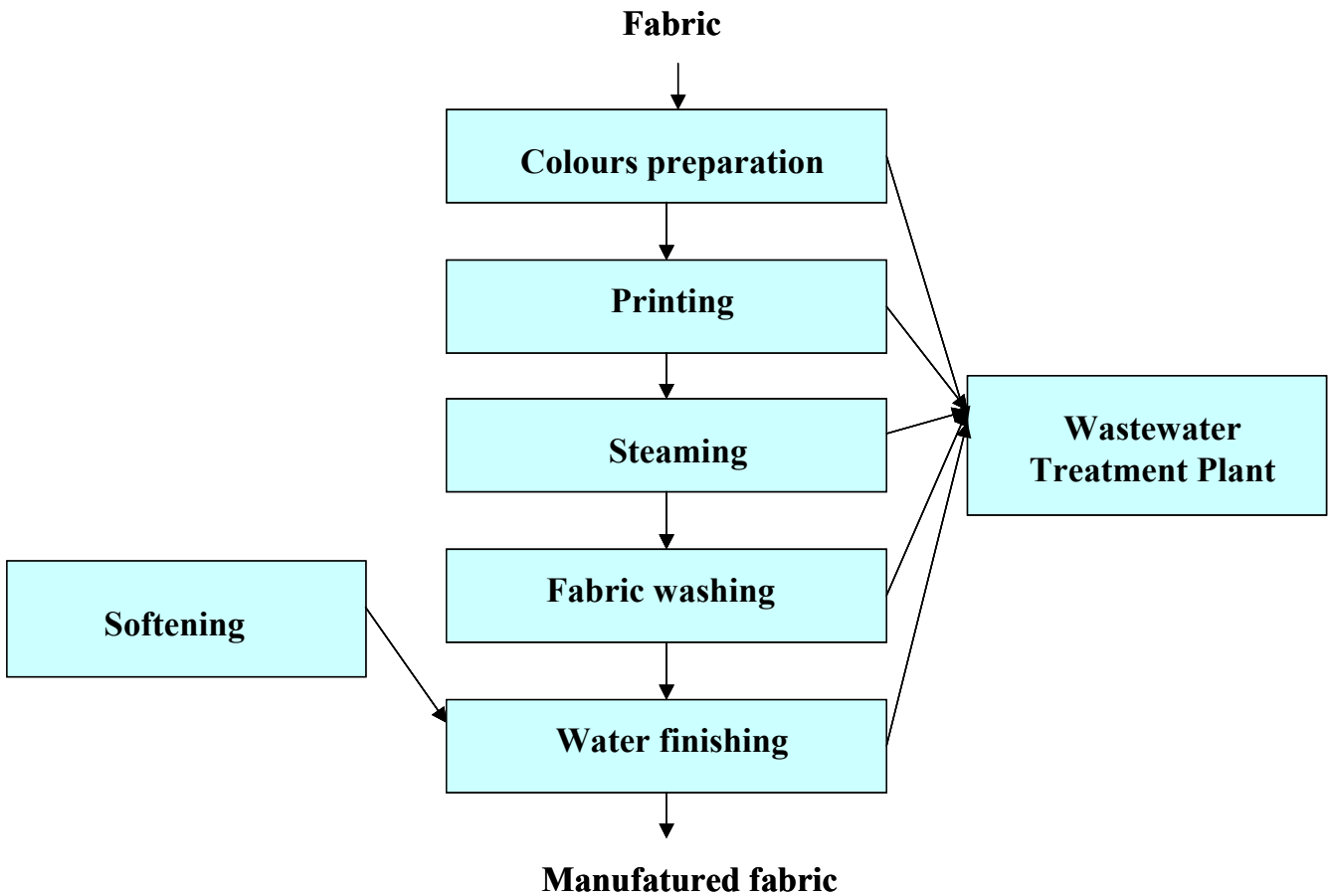
TOWEFO Toward Effluent Zero	Partner ENEA	Identification code TM-108-010	Rev. 0	Dis CO	Pag. 10	of 22
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	Flow	Units	Value
INPUT	(r) Iron (Fe, ore)	kg	5,20E-01
	(r) Natural Gas (in ground)	kg	1,09E+02
	(r) Oil (in ground)	kg	3,58E+01
	(r) Uranium (U, ore)	kg	2,77E-04
	Viscose fabric	kg	1,00E+02
	Water: Public Network	litre	1,31E+02
	Water: Unspecified Origin	litre	7,89E+02
OUTPUT	Water: Well	litre	4,12E+04
	(a) Aldehyde (unspecified)	g	1,58E+01
	(a) Alkane (unspecified)	g	1,42E+01
	(a) Ammonia (NH3)	g	4,49E+01
	(a) Arsenic (As)	g	2,18E-02
	(a) Benzene (C6H6)	g	2,12E+00
	(a) Butane (n-C4H10)	g	8,44E+00
	(a) Cadmium (Cd)	g	4,44E-02
	(a) Carbon Dioxide (CO2, fossil)	g	4,07E+05
	(a) Ethane (C2H6)	g	5,60E+01
	(a) Ethylene (C2H4)	g	4,96E+01
	(a) Heptane (C7H16)	g	6,20E-01
	(a) Hexane (C6H14)	g	1,24E+00
	(a) Hydrocarbons (except methane)	g	3,67E+02
	(a) Hydrocarbons (unspecified)	g	7,12E-01
	(a) Lead (Pb)	g	1,08E-01
	(a) Methane (CH4)	g	1,66E+03
	(a) Nickel (Ni)	g	8,77E-01
	(a) Nitrogen Oxides (NOx as NO2)	g	5,12E+02
	(a) Propane (C3H8)	g	1,47E+01
	(a) Sulphur Oxides (SOx as SO2)	g	1,80E+03
	(a) Toluene (C6H5CH3)	g	1,25E+00
	(a) Vanadium (V)	g	3,39E+00
	(s) Arsenic (As)	g	8,16E-04
	(s) Chromium (Cr III, Cr VI)	g	1,06E-02
	(s) Copper (Cu)	g	1,66E-02
	(s) Zinc (Zn)	g	3,10E-02
	(w) Ammonia (NH4+, NH3, as N)	g	2,99E+02
	(w) Benzene (C6H6)	g	4,61E-01
	(w) Cadmium (Cd++)	g	1,43E-03
	(w) Chromium (Cr III)	g	2,15E-02
	(w) Chromium (Cr III, Cr VI)	g	1,99E-02
	(w) COD (Chemical Oxygen Demand)	g	2,41E+03
	(w) Nitrogenous Matter (unspecified, as N)	g	6,48E+02
	(w) Oils (unspecified)	g	6,72E+00
	Viscose fabric	kg	1,00E+02
Wastewater	litre	4,10E+04	
REMINDERS	E Feedstock Energy	MJ	1,43E+02
	E Fuel Energy	MJ	6,34E+03
	E Non Renewable Energy	MJ	6,26E+03
	E Renewable Energy	MJ	1,88E+02
	E Total Primary Energy	MJ	6,55E+03
	Electricity	MJ elec	8,05E+02
	COD to Wastewater Treatment Plant	kg	1,45E+01
	TSS to Wastewater Treatment Plant	kg	4,41E+00

5 Rotary machine reactive printing of viscose fabric

Product systems	
Printing	F.4.4 Rotary machine reactive printing – Viscose fabric
Steaming	G.1 Saturated steaming – Viscose fabric
Fabric washing	H.1.3 Acid printed washing– Viscose fabric
Water finishing	I.1 Water Finishing - Viscose fabric

PROCESS SCHEME



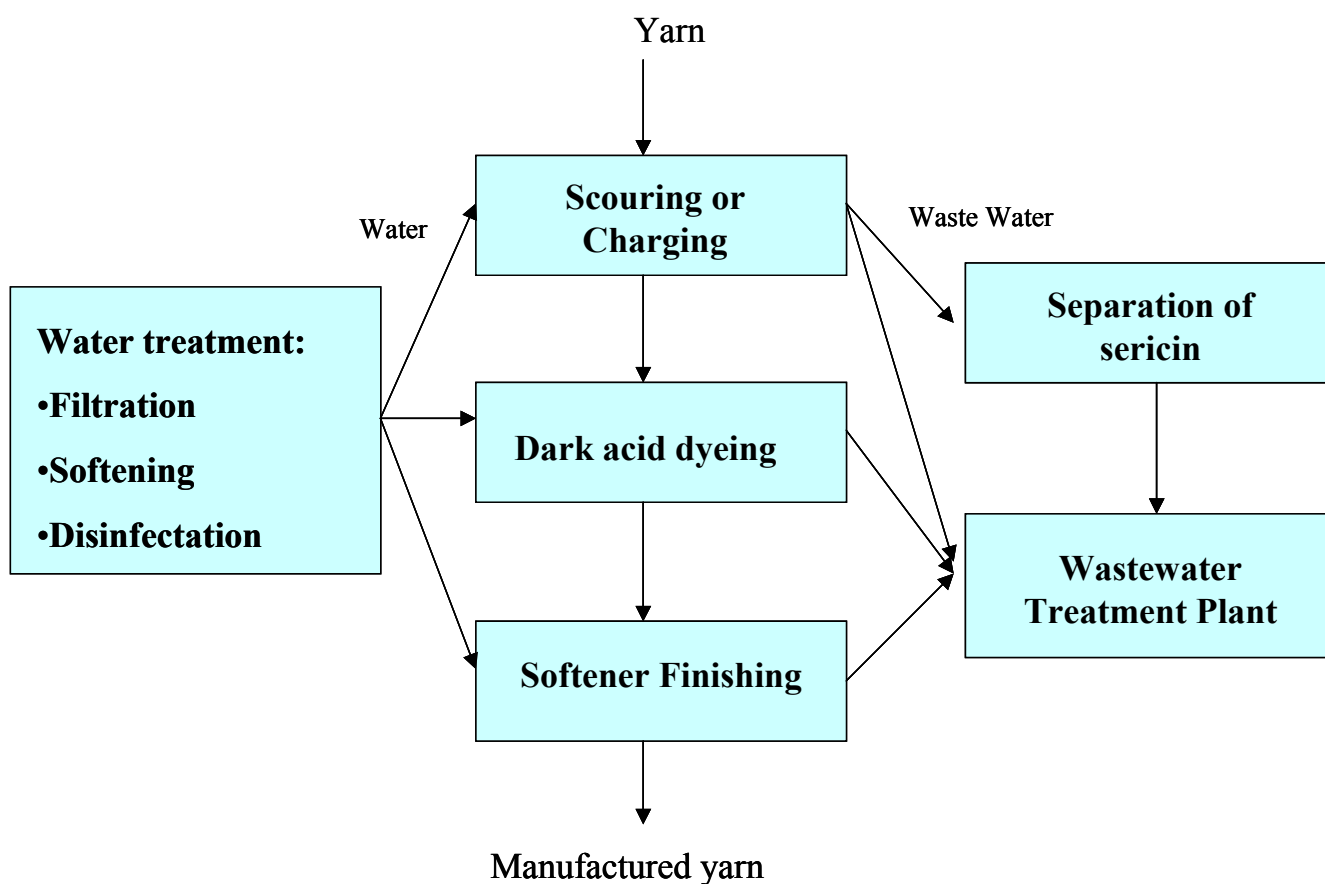
TOWEFO Toward Effluent Zero	Partner ENEA	Identification code TM-108-010	Rev. 0	Dis CO	Pag. 12	of 22
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	<i>Flow</i>	<i>Units</i>	<i>Total</i>
INPUT	(r) Iron (Fe, ore)	kg	5,15E-01
	(r) Natural Gas (in ground)	kg	1,08E+02
	(r) Oil (in ground)	kg	3,41E+01
	(r) Uranium (U, ore)	kg	2,77E-04
	Viscose fabric	kg	1,00E+02
	Water: Public Network	litre	1,31E+02
	Water: Unspecified Origin	litre	7,81E+02
OUTPUT	Water: Well	litre	4,12E+04
	(a) Aldehyde (unspecified)	g	1,58E+01
	(a) Alkane (unspecified)	g	1,40E+01
	(a) Ammonia (NH3)	g	4,49E+01
	(a) Arsenic (As)	g	2,08E-02
	(a) Benzene (C6H6)	g	2,09E+00
	(a) Butane (n-C4H10)	g	8,16E+00
	(a) Cadmium (Cd)	g	4,22E-02
	(a) Carbon Dioxide (CO2, fossil)	g	3,99E+05
	(a) Ethane (C2H6)	g	5,37E+01
	(a) Ethylene (C2H4)	g	4,93E+01
	(a) Heptane (C7H16)	g	5,90E-01
	(a) Hexane (C6H14)	g	1,18E+00
	(a) Hydrocarbons (except methane)	g	3,27E+02
	(a) Hydrocarbons (unspecified)	g	7,05E-01
	(a) Lead (Pb)	g	1,04E-01
	(a) Methane (CH4)	g	1,60E+03
	(a) Nickel (Ni)	g	8,35E-01
	(a) Nitrogen Oxides (NOx as NO2)	g	4,97E+02
	(a) Propane (C3H8)	g	1,41E+01
	(a) Sulphur Oxides (SOx as SO2)	g	1,71E+03
	(a) Toluene (C6H5CH3)	g	1,23E+00
	(a) Vanadium (V)	g	3,22E+00
	(s) Arsenic (As)	g	8,11E-04
	(s) Chromium (Cr III, Cr VI)	g	1,05E-02
	(s) Copper (Cu)	g	1,66E-02
	(s) Zinc (Zn)	g	3,08E-02
	(w) Ammonia (NH4+, NH3, as N)	g	2,99E+02
	(w) Benzene (C6H6)	g	4,39E-01
	(w) Cadmium (Cd++)	g	1,38E-03
	(w) Chromium (Cr III, Cr VI)	g	1,95E-02
	(w) Chromium (Cr VI)	g	4,00E-07
	(w) COD (Chemical Oxygen Demand)	g	2,41E+03
	(w) Nitrogenous Matter (unspecified, as N)	g	6,48E+02
	(w) Oils (unspecified)	g	6,57E+00
	Viscose fabric	kg	1,00E+02
	Wastewater	litre	4,12E+04
REMINDERS	E Feedstock Energy	MJ	1,37E+02
	E Fuel Energy	MJ	6,23E+03
	E Non Renewable Energy	MJ	6,16E+03
	E Renewable Energy	MJ	1,78E+02
	E Total Primary Energy	MJ	6,44E+03
	Electricity	MJ elec	7,66E+02
	COD to Wastewater Treatment Plant	Kg	1,42E+01
	TSS to Wastewater Treatment Plant	Kg	4,37E+00

6 Silk yarn dyed with dark colours

Product systems	
HT scouring	F.1.3 HT scouring – Silk yarn
Silk dark acid dyeing	G.6.2 Dark acid dyeing – Silk yarn
Softener finishing	H.1.1 Softener finishing – Silk yarn

PROCESS SCHEME



TOWEFO Toward Effluent Zero	Partner ENEA	Identification code TM-108-010	Rev. 0	Dis CO	Pag. 14	of 22
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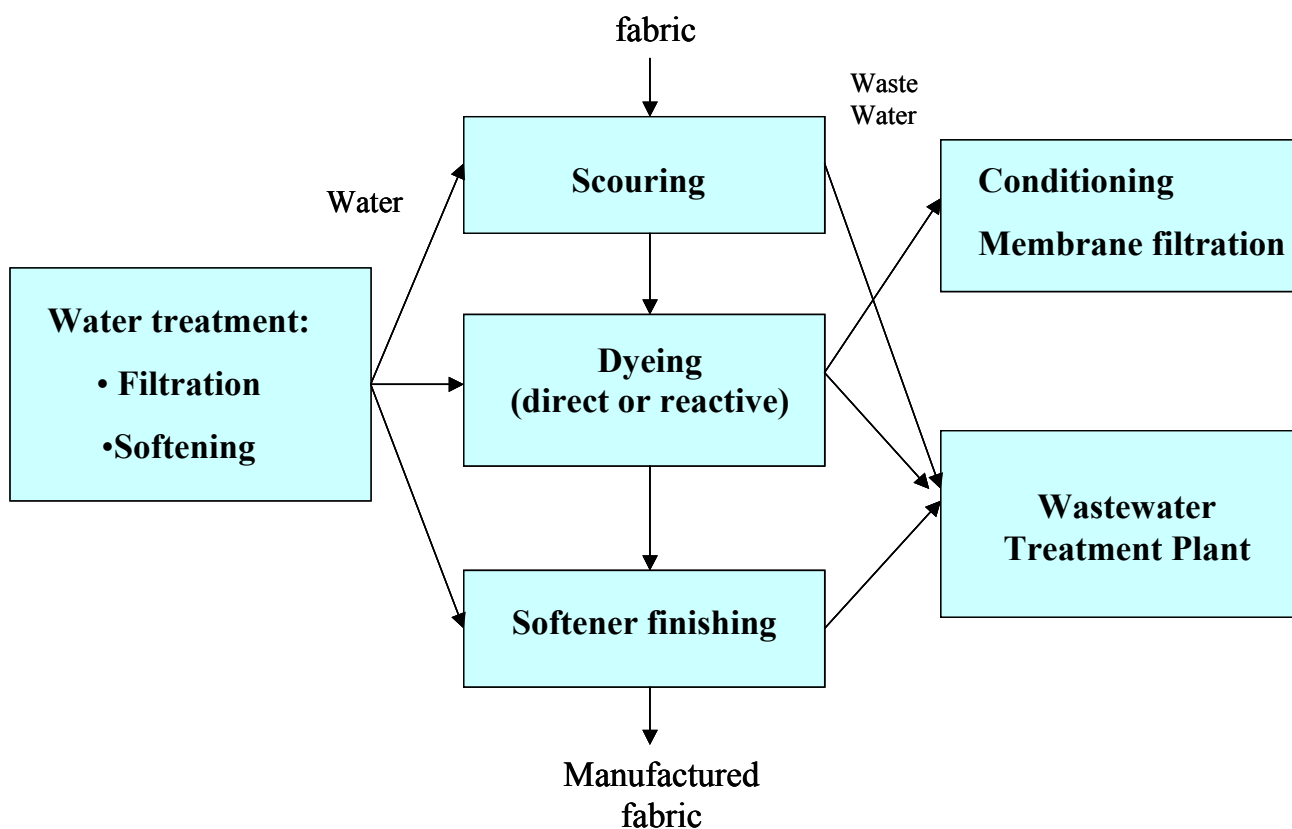
	Flow	Unit	Value	
INPUT	(r) Iron (Fe, ore)	kg	3,89E-01	
	(r) Natural Gas (in ground)	kg	7,88E+01	
	(r) Oil (in ground)	kg	9,71E+00	
	(r) Uranium (U, ore)	kg	1,71E-04	
	Silk yarn	kg	1,00E+02	
	Water to: Sand filtration	litre	1,15E+04	
	Water: Public Network	litre	5,38E-02	
	Water: Unspecified Origin	litre	2,31E+02	
	Water: Well	litre	1,23E-06	
	OUTPUT	(a) Alkane (unspecified)	g	1,05E+01
(a) Arsenic (As)		g	5,09E-03	
(a) Benzene (C6H6)		g	1,46E+00	
(a) Butane (n-C4H10)		g	3,58E+00	
(a) Cadmium (Cd)		g	8,47E-03	
(a) Carbon Dioxide (CO2, fossil)		g	2,22E+05	
(a) Ethane (C2H6)		g	1,86E+01	
(a) Ethylene (C2H4)		g	3,91E+01	
(a) Hexane (C6H14)		g	2,50E-01	
(a) Hydrocarbons (except methane)		g	1,07E+02	
(a) Hydrocarbons (unspecified)		g	2,72E+01	
(a) Hydrogen Chloride (HCl)		g	4,17E+00	
(a) Lead (Pb)		g	2,34E-02	
(a) Manganese (Mn)		g	1,98E-02	
(a) Methane (CH4)		g	4,53E+02	
(a) Nickel (Ni)		g	1,67E-01	
(a) Nitrogen Oxides (NOx as NO2)		g	1,69E+02	
(a) Propane (C3H8)		g	5,08E+00	
(a) Sulphur Oxides (SOx as SO2)		g	3,81E+02	
(a) Toluene (C6H5CH3)		g	7,69E-01	
(a) Vanadium (V)		g	6,55E-01	
(s) Arsenic (As)		g	6,52E-04	
(s) Chromium (Cr III, Cr VI)		g	8,16E-03	
(s) Zinc (Zn)		g	2,45E-02	
(w) Ammonia (NH4+, NH3, as N)		g	7,75E+01	
(w) Benzene (C6H6)		g	1,39E-01	
(w) Cadmium (Cd++)		g	5,40E-04	
(w) Chromium (Cr III)		g	1,71E-02	
(w) COD (Chemical Oxygen Demand)		g	6,92E+02	
(w) Nitrate (NO3-)		g	1,02E+02	
(w) Nitrogenous Matter (unspecified, as N)		g	1,80E+02	
(w) Oils (unspecified)		g	4,03E+00	
Silk yarn		kg	1,00E+02	
Wastewater		litre	1,14E+04	
REMINDERS		E Feedstock Energy	MJ	1,65E+02
		E Fuel Energy	MJ	3,66E+03
		E Non Renewable Energy	MJ	3,78E+03
		E Renewable Energy	MJ	4,30E+01
		E Total Primary Energy	MJ	3,82E+03
		Electricity	MJ elec	3,10E+02
		COD to Wastewater Treatment Plant	kg	3,08E+01
		TSS to Wastewater Treatment Plant	kg	1,74E+00

TOWEFO Toward Effluent Zero	Partner ENEA	Identification code TM-108-010	Rev. 0	Dis CO	Pag. 15	of 22
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7 Viscose fabric dyed in jigger with dark colours

Product systems	
Continuous scouring in mezzera	F.1.1 Light scouring - Viscose fabric
Dark direct dyeing in jigger	G.3.2 Dark direct dyeing – Viscose fabric
Soaping in pad-steam	G.13.1 Soaping – Viscose fabric
Softener 2 finishing	H.2.2 Softener 2 Finishing – Viscose fabric

PROCESS SCHEME



TOWEFO Toward Effluent Zero	Partner ENEA	Identification code TM-108-010	Rev. 0	Dis CO	Pag. 16	of 22
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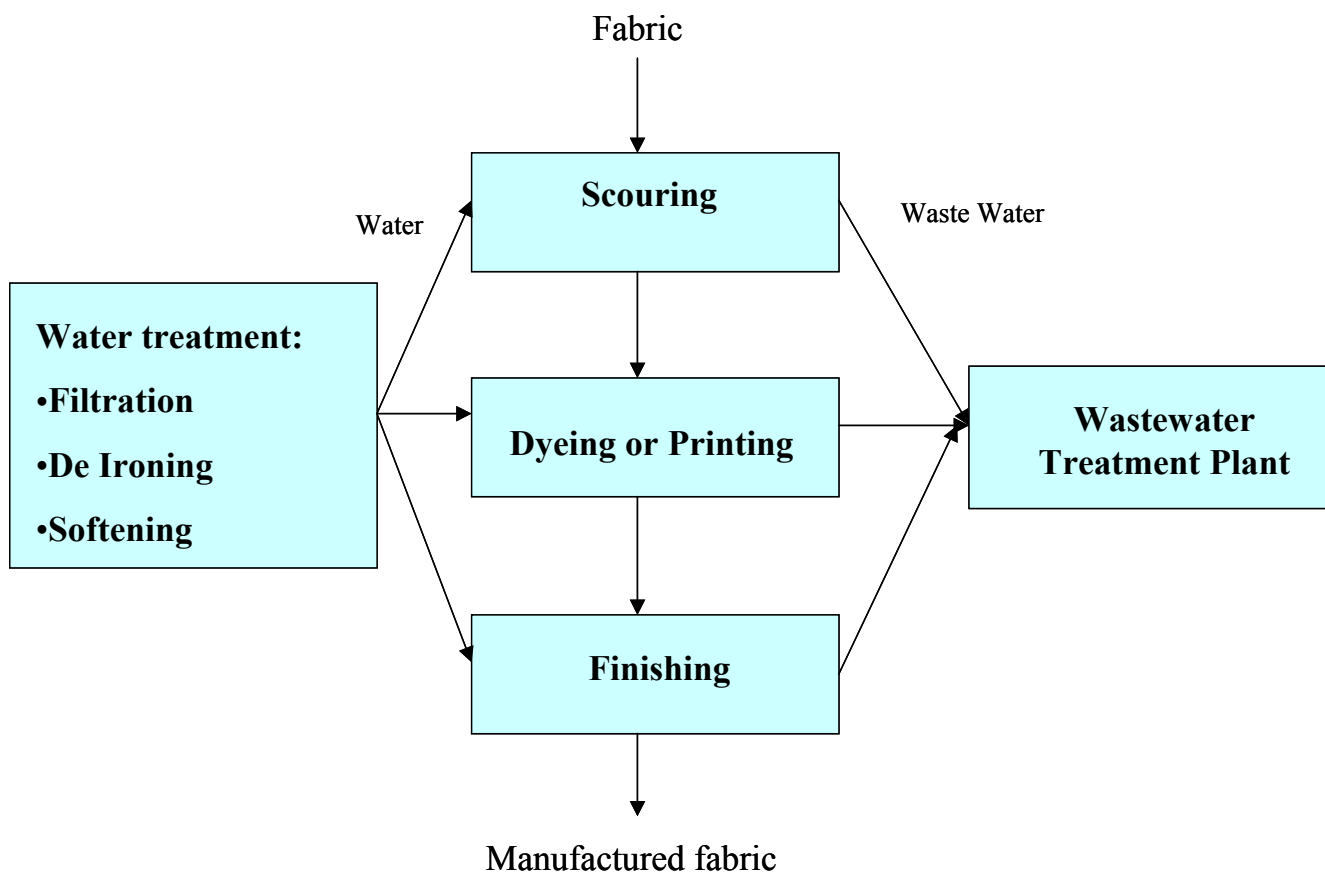
	Flow	Units	Value	
INPUT	(r) Iron (Fe, ore)	kg	2,10E-01	
	(r) Natural Gas (in ground)	kg	4,11E+01	
	(r) Oil (in ground)	kg	9,10E+00	
	(r) Uranium (U, ore)	kg	7,67E-05	
	Viscose fabric	kg	1,00E+02	
	Water to: Sand Filtration	litre	3,48E+03	
	Water: from Membrane ultra-filtration	litre	2,98E+02	
	Water: Unspecified Origin	litre	1,10E+02	
	Water: Well	litre	2,04E+03	
OUTPUT	(a) Alkane (unspecified)	g	5,46E+00	
	(a) Arsenic (As)	g	5,96E-03	
	(a) Benzene (C6H6)	g	8,80E-01	
	(a) Butane (n-C4H10)	g	2,70E+00	
	(a) Cadmium (Cd)	g	1,14E-02	
	(a) Carbon Dioxide (CO2, fossil)	g	1,36E+05	
	(a) Ethane (C2H6)	g	1,65E+01	
	(a) Ethylene (C2H4)	g	2,05E+01	
	(a) Hydrocarbons (except methane)	g	8,40E+01	
	(a) Hydrogen Chloride(HCl)	g	3,95E+00	
	(a) Lead (Pb)	g	3,42E-02	
	(a) Methane (CH4)	g	4,21E+02	
	(a) Nickel (Ni)	g	2,24E-01	
	(a) Nitrogen Oxides (NOx as NO2)	g	1,33E+02	
	(a) Propane (C3H8)	g	4,42E+00	
	(a) Sulphur Oxides (SOx as SO2)	g	4,66E+02	
	(a) Toluene (C6H5CH3)	g	4,55E-01	
	(a) Vanadium (V)	g	8,88E-01	
	(s) Arsenic (As)	g	3,39E-04	
	(s) Chromium (Cr III, Cr VI)	g	4,25E-03	
	(s) Zinc (Zn)	g	1,27E-02	
	(w) Ammonia (NH4+, NH3, as N)	g	2,36E+01	
	(w) Benzene (C6H6)	g	1,24E-01	
	(w) Cadmium (Cd++)	g	3,67E-04	
	(w) Chromium (Cr III)	g	8,91E-03	
	(w) COD (Chemical Oxygen Demand)	g	2,02E+02	
	(w) Nitrogenous Matter (unspecified, as N)	g	5,46E+01	
	(w) Oils (unspecified)	g	2,38E+00	
	Viscose fabric	kg	1,00E+02	
	Wastewater	litre	5,52E+03	
	REMINDERS	E Feedstock Energy	MJ	3,48E+01
		E Fuel Energy	MJ	2,18E+03
		E Non Renewable Energy	MJ	2,16E+03
E Renewable Energy		MJ	5,36E+01	
E Total Primary Energy		MJ	2,22E+03	
Electricity		MJ elec	4,09E+02	
COD to Wastewater Treatment Plant		kg	5,89E+00	
TSS to Wastewater Treatment Plant		kg	2,65E-01	

TOWEFO Toward Effluent Zero	Partner ENEA	Identification code TM-108-010	Rev. 0	Dis CO	Pag. 17	of 22
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8 Acid dyeing of silk

Product systems	
Silk continuous scouring	F.1.1 Continuous scouring – Silk fabric
Silk dark acid dyeing	G.3.1 Dark dyeing – Silk fabric
Morbidol finishing	M.3.4 Morbidol finishing – Silk fabric

PROCESS SCHEME



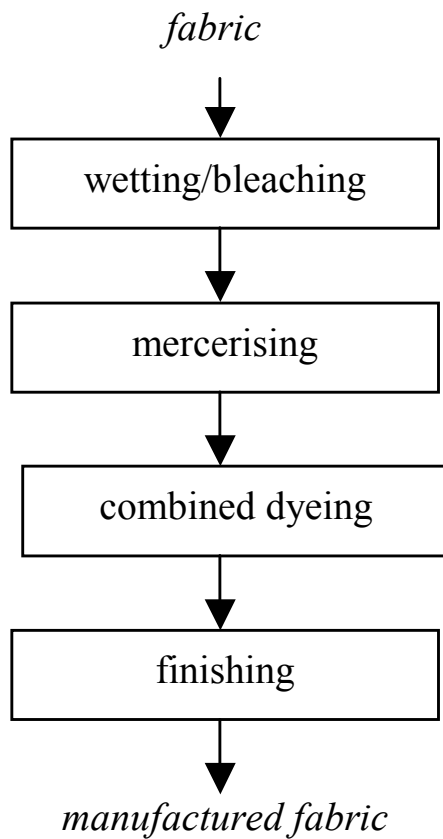
TOWEFO Toward Effluent Zero	Partner ENEA	Identification code TM-108-010	Rev. 0	Dis CO	Pag. 18	of 22
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	Flow	Units	Value	
INPUT	(r) Iron (Fe, ore)	kg	8,91E-01	
	(r) Natural Gas (in ground)	kg	1,85E+02	
	(r) Oil (in ground)	kg	1,02E+01	
	(r) Uranium (U, ore)	kg	3,62E-04	
	Silk fabric	kg	1,00E+02	
	Water: Industrial	litre	5,22E+03	
	Water: Public Network	litre	4,37E+01	
	Water: Unspecified Origin	litre	4,33E+02	
OUTPUT	Water: Well	litre	3,31E+03	
	(a) Aldehyde (unspecified)	g	3,87E+00	
	(a) Alkane (unspecified)	g	2,18E+01	
	(a) Ammonia (NH3)	g	2,46E+01	
	(a) Arsenic (As)	g	7,69E-03	
	(a) Benzene (C6H6)	g	3,41E+00	
	(a) Butane (n-C4H10)	g	7,35E+00	
	(a) Cadmium (Cd)	g	1,20E-02	
	(a) Carbon Dioxide (CO2, fossil)	g	4,97E+05	
	(a) Ethane (C2H6)	g	3,38E+01	
	(a) Ethylene (C2H4)	g	9,01E+01	
	(a) Hydrocarbons (except methane)	g	1,67E+02	
	(a) Hydrogen Chloride (HCl)	g	6,77E+00	
	(a) Lead (Pb)	g	5,69E-02	
	(a) Methane (CH4)	g	8,78E+02	
	(a) Nickel (Ni)	g	2,36E-01	
	(a) Nitrogen Oxides (NOx as NO2)	g	3,44E+02	
	(a) Propane (C3H8)	g	9,75E+00	
	(a) Sulphur Oxides (SOx as SO2)	g	5,90E+02	
	(a) Vanadium (V)	g	9,13E-01	
	(s) Arsenic (As)	g	1,15E-03	
	(s) Chromium (Cr III, Cr VI)	g	1,89E-02	
	(s) Zinc (Zn)	g	5,66E-02	
	(w) Ammonia (NH4+, NH3, as N)	g	5,73E+01	
	(w) COD (Chemical Oxygen Demand)	g	4,96E+02	
	(w) Nitrate (NO3-)	g	7,47E+01	
	(w) Nitrogenous Matter (unspecified, as N)	g	1,33E+02	
	Silk fabric	kg	1,00E+02	
	Wastewater	litre	8,39E+03	
	REMINDERS	E Feedstock Energy	MJ	6,73E+01
		E Fuel Energy	MJ	8,31E+03
		E Non Renewable Energy	MJ	8,31E+03
E Renewable Energy		MJ	6,78E+01	
E Total Primary Energy		MJ	8,38E+03	
Electricity		MJ elec	4,76E+02	
COD to Wastewater Treatment Plant		kg	1,62E+01	
TSS to Wastewater Treatment Plant		kg	1,96E+00	

TOWEFO Toward Effluent Zero	Partner ENEA	Identification code TM-108-010	Rev. 0	Dis CO	Pag. 19	of 22
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9 Cotton /Pes fabric production

PROCESS SCHEME



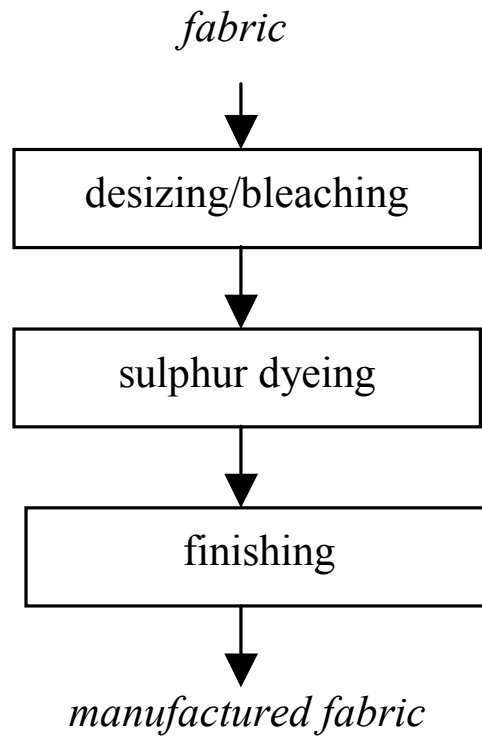
TOWEFO Toward Effluent Zero	Partner ENEA	Identification code TM-108-010	Rev. 0	Dis CO	Pag. 20	of 22
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	Flow	Units	Value	
INPUTS	(r) Iron (Fe, ore)	kg	4,52E-01	
	(r) Natural Gas (in ground)	kg	9,43E+01	
	(r) Oil (in ground)	kg	1,88E+00	
	(r) Uranium (U, ore)	kg	4,07E-04	
	PES/CO fabric	kg	1,00E+02	
	Water: Treated	l	5,16E+03	
	Water: Unspecified Origin	l	9,03E+01	
OUTPUTS	(a) Alkane (unspecified)	g	1,08E+01	
	(a) Aromatic Hydrocarbons (unspecified)	g	7,57E-01	
	(a) Arsenic (As)	g	1,80E-03	
	(a) Benzene (C6H6)	g	1,61E+00	
	(a) Butane (n-C4H10)	g	3,22E+00	
	(a) Carbon Dioxide (CO2, fossil)	g	2,44E+05	
	(a) Ethane (C2H6)	g	1,28E+01	
	(a) Ethylene (C2H4)	g	4,60E+01	
	(a) Hydrocarbons (unspecified)	g	2,43E+00	
	(a) Hydrogen Chloride (HCl)	g	4,89E+00	
	(a) Hydrogen Sulphide (H2S)	g	1,49E+00	
	(a) Manganese (Mn)	g	2,23E-02	
	(a) Methane (CH4)	g	3,33E+02	
	(a) Nickel (Ni)	g	3,41E-02	
	(a) Nitrogen Oxides (NOx as NO2)	g	1,89E+02	
	(a) Propane (C3H8)	g	3,86E+00	
	(a) Sulphur Oxides (SOx as SO2)	g	1,76E+02	
	(a) Vanadium (V)	g	1,22E-01	
	(s) Arsenic (As)	g	7,71E-04	
	(s) Chromium (Cr III, Cr VI)	g	9,65E-03	
	(s) Zinc (Zn)	g	2,90E-02	
	(w) Ammonia (NH4+, NH3, as N)	g	2,71E+01	
	(w) Cadmium (Cd++)	g	1,73E-04	
	(w) Chromium (Cr III)	g	2,03E-02	
	(w) COD (Chemical Oxygen Demand)	g	2,49E+02	
	(w) Nitrate (NO3-)	g	3,75E+01	
	(w) Nitrogenous Matter (unspecified, as N)	g	6,31E+01	
	(w) Oils (unspecified)	g	4,00E+00	
	PES/CO fabric	kg	1,00E+02	
	REMINDERS	E Feedstock Energy	MJ	2,02E+01
		E Fuel Energy	MJ	4,14E+03
		E Non Renewable Energy	MJ	4,13E+03
		E Renewable Energy	MJ	2,56E+01
E Total Primary Energy		MJ	4,16E+03	
Electricity		MJ elec	1,77E+02	
COD: to Wastewater Treatment Plant		kg	9,83E-01	

TOWEFO Toward Effluent Zero	Partner ENEA	Identification code TM-108-010	Rev. 0	Dis CO	Pag. 21	of 22
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10 Cotton fabric production

PROCESS SCHEME



TOWEFO Toward Effluent Zero	Partner ENEA	Identification code TM-108-010	Rev. 0	Dis CO	Pag. 22	of 22
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	Flow	Units	Value	
INPUTS	(r) Bauxite (Al ₂ O ₃ , ore)	kg	4,94E-02	
	(r) Coal (in ground)	kg	1,02E+01	
	(r) Iron (Fe, ore)	kg	2,01E-01	
	(r) Natural Gas (in ground)	kg	3,98E+01	
	(r) Oil (in ground)	kg	3,50E+00	
	(r) Potassium Chloride (KCl, as K ₂ O, in ground)	kg	6,49E-02	
	(r) Uranium (U, ore)	kg	2,60E-04	
	Cotton fabric	kg	1,00E+02	
	Water: Treated	l	2,44E+03	
	Water: Unspecified Origin	l	8,34E+01	
OUTPUTS	(a) Alkane (unspecified)	g	5,19E+00	
	(a) Aromatic Hydrocarbons (unspecified)	g	5,42E-01	
	(a) Arsenic (As)	g	6,32E-03	
	(a) Benzene (C ₆ H ₆)	g	1,19E+00	
	(a) Butane (n-C ₄ H ₁₀)	g	1,71E+00	
	(a) Carbon Dioxide (CO ₂ , fossil)	g	1,41E+05	
	(a) Carbon Monoxide (CO)	g	4,02E+02	
	(a) Ethane (C ₂ H ₆)	g	9,92E+00	
	(a) Ethylene (C ₂ H ₄)	g	2,21E+01	
	(a) Hydrocarbons (except methane)	g	5,25E+01	
	(a) Hydrocarbons (unspecified)	g	4,23E+00	
	(a) Hydrogen Chloride (HCl)	g	1,16E+01	
	(a) Lead (Pb)	g	2,49E-02	
	(a) Methane (CH ₄)	g	3,06E+02	
	(a) Nickel (Ni)	g	8,12E-02	
	(a) Nitrogen Oxides (NO _x as NO ₂)	g	1,68E+02	
	(a) Propane (C ₃ H ₈)	g	3,34E+00	
	(a) Propylene (CH ₂ CHCH ₃)	g	5,36E-01	
	(a) Sulphur Oxides (SO _x as SO ₂)	g	2,86E+02	
	(a) Vanadium (V)	g	3,06E-01	
	(s) Arsenic (As)	g	3,20E-04	
	(s) Chromium (Cr III, Cr VI)	g	4,01E-03	
	(s) Zinc (Zn)	g	1,20E-02	
	(w) Ammonia (NH ₄ ⁺ , NH ₃ , as N)	g	1,32E+01	
	(w) Benzene (C ₆ H ₆)	g	4,77E-02	
	(w) Cadmium (Cd ⁺⁺)	g	1,63E-04	
	(w) Chromium (Cr III)	g	8,41E-03	
	(w) Chromium (Cr III, Cr VI)	g	7,70E-04	
	(w) COD (Chemical Oxygen Demand)	g	1,24E+02	
	(w) Nitrate (NO ₃ ⁻)	g	1,85E+01	
	(w) Nitrogenous Matter (unspecified, as N)	g	3,05E+01	
	(w) Oils (unspecified)	g	1,85E+00	
	Cotton fabric	kg	1,00E+02	
	REMINDERS	E Feedstock Energy	MJ	8,73E+01
		E Fuel Energy	MJ	2,71E+03
E Non Renewable Energy		MJ	2,05E+03	
E Renewable Energy		MJ	7,49E+02	
E Total Primary Energy		MJ	2,80E+03	
Electricity		MJ elec	9,89E+02	
COD: to Wastewater Treatment Plant		kg	1,61E+01	
TSS: to Wastewater Treatment Plant		kg	7,64E-01	